



1930-31.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH

NEW SOUTH WALES,

FOR THE YEAR 1930.

PRESENTED BY THE MINISTER FOR HEALTH
(THE HON. WILLIAM THOMAS ELY, M.L.A.).

Ordered by the Legislative Assembly to be printed, 22 September, 1931.



SYDNEY: ALFRED JAMES KENT, I.S.O., GOVERNMENT PRINTER.

1931.



Presented by .

Director General of Public Health.

August

1932.



22501407304

1930-31.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.



REPORT

OF THE

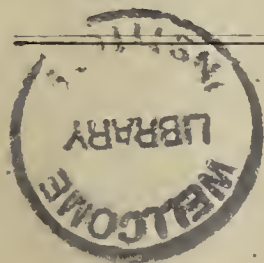
DIRECTOR-GENERAL OF PUBLIC HEALTH,

NEW SOUTH WALES,

FOR THE YEAR 1930.

PRESENTED BY THE MINISTER FOR HEALTH
(THE HON. WILLIAM THOMAS ELY, M.L.A.).

Ordered by the Legislative Assembly to be printed, 22 September, 1931.



SYDNEY: ALFRED JAMES KENT, I.S.O., GOVERNMENT PRINTER.

1931.

WELDON INSTITUTE	
LIBRARY	
Coll.	1000-1000
Cat.	+
No.	Ann Rep
	WA28
	- KAS
	N 53

1930

**Office of the Director-General of Public Health, 93 Macquarie-
street, Sydney.**

Members of the State Board of Health, 1930.

Robert Dick, M.B., Ch.M., D.P.H. (President).

Augustus Frederick Robinson, Esq.	...	...	...	Member, Board of Health.
Cecil Purser, M.B., Ch.M....	...	...	...	do do
William George Armstrong, M.B., D.P.H.	...	...	...	do do
The Hon. Frank Edgar Wall, M.D., M.L.C.	...	...	...	do do
L. P. Vial	...	...	...	do do
R. J. Hawkes, Chamber of Commerce	...	...	...	do do
J. Jackson, Lord Mayor	...	...	...	do do
Mrs. Euphemia Jean Maincke	...	...	...	do do
Mrs. Emma Linda Palmer Littlejohn	...	...	...	do do

Administrative Staff.

Director-General of Public Health and Commissioner for Venereal Diseases : Robert Dick, M.B., Ch.M., D.P.H.

Senior Medical Officer of Health and Director of Maternal and Baby Welfare : E. Sydney Morris, M.D., Ch.M., D.P.H.

Assistant Medical Officer of Health : F. M. Suckling, M.B., D.P.H.

Secretary : T. H. Neely.

Divisions and Branches.

The following Divisions are controlled by the Director-General of Public Health :—Maternal and Baby Welfare; Tuberculosis; Venereal Diseases; Industrial Hygiene; Government Medical Officers for Sydney; Medical Officers of Health, Metropolitan, Newcastle and Broken Hill Districts; Microbiological Laboratories, Sydney and Broken Hill; Chemical Laboratory; Pure Food; Cattle Slaughtering; Sanitation; Publicity, &c.

The Hospital Division comprises the Coast and David Berry Hospitals, Leper Lazaret, five State Hospitals and Homes, Waterfall Sanatorium, Greycliffe Babies Hospital, and two Convalescent Hospitals.

Legislative Enactments.

The Minister of Public Health is charged with the administration of the following Acts, execution of which is left to the Director-General of Public Health and the staff working under his control :—Cattle Slaughtering and Diseased Animals and Meat (Amendment) Act, 1902; Diseased Animals and Meat (Amendment) Act, 1910; Food Preservation by Sulphur Dioxide Enabling Act, 1920; Noxious Trades Act, 1902; Private Hospitals Act, 1908; Public Health Acts, 1902–1921; Pure Food Act, 1908; Wine Adulteration Act, 1902; and Closed Cemeteries and Exhumation of Bodies for the purpose of re-interment, &c.



Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

<https://archive.org/details/b31485212>

CONTENTS.

	PAGE.
Letter of Presentation	i
Vital Statistics, 1930—Extract from Government Statistician's Report.....	17

SECTION I.

A.—Public Health Administration.

Chemical Laboratory : Report of the Acting Government Analyst (Mr. S. G. Walton)	...	...	14
Pure Food Act, 1908 : Report of the Chief Inspector (Mr. Arthur Kench)	...	...	19
Report of the Chief Sanitary Inspector (Mr. E. A. Cresswick)	...	...	21
Private Hospitals Act : Report by Dr. F. M. Suckling...	...	...	23
Medico-Legal Section and Hospital Admission Depot; Report of the Government Medical Officer for Sydney (Dr. Arthur Palmer)	...	...	25

B.—Division of Maternal and Baby Welfare.

Report of the Director (Dr. E. Sydney Morris)	26
--	----

C.—Communicable Diseases.

Return of Diseases notifiable under the Public Health Acts for year ended 31st December, 1930 (with graphs)	35
Scarlet Fever, Lord Howe Island: Resume of data collected during outbreak in 1929-30	45
Measles amongst scarlet fever cases, Coast Hospital: Some Notes on (Dr. F. H. H. Wilson) ...	46
Abnormal conditions of Public Health Interest (Dr. E. Sydney Morris)—	
(a) Endemic typhus fever (Brill's disease)	47
(b) Iodide rash simulating smallpox	51
Venereal Diseases Act, 1918: Report by the Commissioner (Dr. Robert Dick) for year ended 31st December, 1930	53

D.—Tuberculosis Division.

Report of the Director (Dr. H. K. Denham)	59
---	--------	----

E.—Industrial Hygiene.

Report of the Medical Officer for Industrial Hygiene (Dr. Charles Badham)	63
Studies in Industrial Hygiene No. 16 : Bakers' Dermatitis from Activators containing Persulphates	71

SECTION II.—MEDICAL OFFICERS OF HEALTH.

Metropolitan Combined Sanitary District: Report of the Medical Officer of Health (Dr. J. S. Purdy)	77
Hunter River Combined Sanitary District: Report of the Medical Officer of Health (Dr. H. G. Wallace)	87
Broken Hill Sanitary District : Report of the Medical Officer of Health (Dr. W. E. George)	91

SECTION III.—HOSPITALS AND INSTITUTIONS.

Report upon the State Hospitals, &c., under the control of the Director-General of Public Health :—								
1. Coast Hospital, Little Bay, and Auxiliary, at Randwick; Report of the Medical Superintendent (Dr. R. J. Millard)	...	...	...	...	...	...	...	92
2. Leprosy in New South Wales (Dr. R. J. Millard)	...	.	...	...	...	...	...	107
3. David Berry Hospital, Berry	...	...	...	...	...	...	...	112
4. Lady Edeline Hospital for Babies, "Greycliff," Vaucluse	...		...	...	...	...	...	112
5. Strickland Convalescent Hospital for Women, "Carrara," Rose Bay	...		...	...	...	...	...	113
6. Denistone House, Convalescent Hospital for Men, Eastwood	...		...	...	...	...	...	113
7. State Sanatorium for Consumptives, Waterfall (Dr. H. W. Palmer)	...		...	...	...	...	...	113
8. Lidcombe State Hospital and Home for Men, Lidcombe (Dr. H. Baret)	...		...	...	...	...	...	116
9. State Hospital and Home for Men, Liverpool (Dr. Donald Wallace)	...		...	...	...	...	...	117
10. State Hospital and Home for Women, Newington (Mr. W. Megarvey)	...		...	...	...	...	...	119
11. State Home for Aged and Infirm Men, George-street, Parramatta	...		...	...	...	...	...	119
12. State Home for the Blind, and Men suffering from Defective Sight and Senility, Macquarie-street, Parramatta	...	...	...	...	...	...	...	120
13. Statistical Tables for Institutions, Table 1, Nos. 4-6	...		...	...	...	...	...	120
2, Nos. 7-12	...		...	...	...	...	...	121

SECTION IV.—MICROBIOLOGICAL LABORATORY.

Report of the Principal Microbiologist (Dr. E. L. Morgan)	...	...	...	...	...	...	122
Part I. Routine Work	...	...	...	...	...	...	123
Part II. Investigational Work—							
1. Unusual situation of <i>Enterobius (Oxyuris) vermicularis</i>	...	...	...	...	...	...	126
2. Sydney Milk Supply: Bacterial counts and examinations for tubercle bacilli						...	127
3. Destruction of Bacteria in Sewage by Chlorination	...	...	...	...	...	...	132

REPORT of the Director-General of Public Health to the
Honorable the Minister of Health.

Sir,

I have the honour to present herewith my report for the year 1930.

The volume of work carried out by the different branches of the department, as indicated in the report, compares favourably with that of the preceeding year, although it has not been possible to proceed with the expansion of certain activities to the extent desired in view of the necessity for the exercise of the strictest economy.

It is regretted that it has not been possible to provide a continuous clinic for male cases of venereal diseases in the metropolis, the absence of which is becoming increasingly felt. As the Federal Government has decided to discontinue its contribution to the State to help it in this field of work, an increased burden will be thrown upon the State in meeting the cost, and at a period when it will very probably be found difficult to provide the usual amount of funds for this important work.

No legislative action has been taken to amend or consolidate various statutes administered by the Department, although this is greatly needed, and has been urged on a number of occasions.

The administration of the Dairies Supervision Act was transferred during the year to the Department of Agriculture. This statute, which was brought into existence in 1886, largely as a result of the efforts of the Board of Health, was administered by it continuously for a period of forty-four years. It can, I think, be rightly elaimed that, as a result of the operation of this statute, the quality of the milk supply was vastly improved, and a considerable improvement in the health of the community has resulted.

In view of the serious economic difficulties now being experienced by the State, it may happen that the altered conditions under which large numbers of our people are unfortunately obliged to live may lead to the occurrence of certain forms of ill-health. Certain intestinal diseases, which not unusually result from the absence of adequate precautions for the safe disposal of excrementitious materials, may arise owing to large numbers of persons being obliged to live in camps and other temporary shelters with their accompanying disabilities.

The sum of £1,042 was received from individuals and certain Governmental authorities for whom laboratory and other services were rendered. In addition, an amount of £2,694 was paid into consolidated revenue as a result of successful prosecutions carried out by the Department.

General Health Conditions during 1930.—As judged by the diminution in the death rate, health conditions during the past year were very satisfactory, both the general death rate (8·54 per 1,000 of the population) and the infantile mortality rate (49·72 per 1,000 births) being the lowest recorded in this State. Previous rates most nearly approximating to these were for the year 1922, when the general death rate was 8·92, and the infantile mortality rate 53·97. The absence of epidemic diseases of the respiratory system largely contributed to the decrease in the number of deaths from 24,615 in 1929 to 21,252 in 1930. Deaths from both diseases of the heart and cancer showed a decrease in 1930 compared with 1929, the figures for diseases of the heart being 4,102 in 1929 and 3,421 in 1930, and for cancer 2,322 in 1929 and 2,290 in 1930. Increases occurred in the number of deaths from measles (100 in 1930 and 66 in 1929), and from diarrhœa and enteritis in children under 2 years (557 in 1930 and 474 in 1929). Suicides increased from 301 in 1929 to 361 in 1930.

Vital Statistics.—An extract from the Government Statistician's review of the Vital Statistics for 1930 is contained on page 10. The population of the State on 31st December was 2,502,039, of whom 1,271,356 were males and 1,230,683 females (a ratio of 103 males to 100 females). The births numbered 52,136, equivalent to a rate of 20·94 per 1,000 of the population, the lowest hitherto recorded.

The vital statistics for the metropolitan district of Sydney, Newcastle, and Hunter River Combined District, and the mining district of Broken Hill, are reviewed by the Medical Officers of Health for those districts (pp. 77–91). The death rate and infant mortality rate of Sydney are probably lower than for any other city in the world with a population of over half a million (see Table, page 79).

INFECTIOUS DISEASES, 1930 (p. 35).

Typhoid Fever.—The 380 notifications of typhoid fever recorded in 1930 is the lowest number reported since the introduction of notification in 1898, and is less than the total of the deaths from typhoid fever in that year, the returns for which were : Cases, 3,302; deaths, 387. The steady decline in typhoid fever is shown in the figures below for the years 1900, 1910, 1920 and 1930 :—

Year.	Population.	Notified Cases.	Rate per 100 000 of Population.	Deaths.	Fatality Rate.
					per cent.
1900	1,364,590	3,442	29·4	398	11·56
1910	1,638,220	2,714	17·6	294	10·83
1920	2,099,763	2,016	5·0	132	12·99
1930	2,502,000	380	1·6	48	12·63

Typhoid vaccine for prophylactic use by oral administration has been under consideration for some time, and during 1930 a small supply was obtained from the Medical Research Institute of South Africa. There are certain centres in the State where typhoid fever is endemic, and the offer of free prophylactic treatment by the usual subcutaneous methods has met with no response. In these centres it is thought that perhaps the non-immunized residents will avail themselves of this alternative method of acquiring immunity against this disease.

Scarlet Fever.—The total notified cases numbered 4,400, of which 2,972 were in the metropolitan district, and 1,428 in other parts of the State. There were 54 deaths.

Two small outbreaks of 14 cases and 11 cases respectively were associated with a common source of milk supply.

At Lord Howe Island (a dependency of New South Wales about 400 miles to the north-east) there was a small outbreak of 16 cases and 1 death in a population of 110 persons. So far as is known, this is the first occurrence of scarlet fever amongst the inhabitants of this dependency, but there is a record of an epidemic of measles on the Island in 1868.

The infection which gave rise to the recent epidemic of scarlet fever on Lord Howe was, in all probability, conveyed by tourists from the Australian mainland. The tourist traffic is increasing, and through this means the Islanders will, no doubt, become more liable to inroads of infection. As this isolated population is of considerable interest, some general notes on the sanitary circumstances existing on the Island are included on page 45.

So far little use is being made in this State of active immunization in preventing scarlet fever. On the other hand, the use of antitoxin in the treatment of severe cases of the disease is becoming more common; and as a prophylactic against infection in susceptible contacts in premises invaded by the disease antitoxin is being found of considerable value.

Diphtheria.—4,061 cases were notified, of which 1,907 were in the metropolitan district, and 2,144 in other parts of the State. There were 176 deaths. The only considerable epidemic was at Albury, from which 219 cases and 3 deaths were reported—a comparatively low death-rate for this serious disease.

In the campaign against diphtheria, preventive inoculation is becoming more and more used in Britain and other parts of the world. This department began a campaign of preventive inoculation in 1923, and the use of toxin antitoxin was being gradually extended up to 1928, when it was discontinued owing to a very regrettable accident from its use in an adjoining State.

During more recent years an improved immunizing preparation, known as anatoxin, has been increasingly employed abroad in the prevention of diphtheria, and it is hoped that the beneficial results recorded elsewhere following the use of this more satisfactory product will lead to its early adoption here as a protection against this serious disease, the incidence of which persists in the community despite improved general sanitary conditions.

In attempting to limit the spread of infection in the presence of an epidemic of diphtheria there is, as a rule, no difficulty in obtaining the consent of parents to the use of antitoxin as a preventative in the case of any susceptible children contacts on the invaded premises. Difficulties sometimes arise when such parents are not in a position to pay for antitoxin for this purpose. In such cases the Department usually urges on the local authority of the district the responsibility of meeting the cost.

Typhus Fever.—Two cases were reported in 1930 from a waterside suburb, and notes concerning them will be found on page 47.

In the two years 1928–1929 four cases of endemic typhus were reported in the north-eastern corner of the State, one (1928) at a railway camp near Kyogle, and three (1929) at Lismore, making a total of six cases in the last three years. In every case the patient's serum agglutinated *Proteus* X19. A case is stated to have occurred at Lismore in 1927, but no history is available.

It is generally held that the form of typhus fever met with in Australia, like the true typhus of the Old World, is conveyed by means of an insect host. But although rats have been more or less in evidence in connection with the premises from which cases of the disease have been reported in this State and elsewhere there has so far been no definite proof that these animals or their parasites are the sources of infection.

Infantile Paralysis.—30 cases and 6 deaths were recorded in 1930, as against 241 cases and 29 deaths in 1929. The crippling disabilities arising from this malady are attracting widespread attention to its damaging effects and the need for early treatment. It is estimated that the Commonwealth Government is now paying about £18,000 annually in invalid pensions to persons crippled by the after effects of this disease.

Reference was made in the Annual Report for 1929 (page 4) to the Committee set up under the Chairmanship of Sir Charles Clubbe for the purpose of assisting in the early diagnosis and treatment of cases. After inquiry this Committee succeeded in locating some 30 suitable donors, from whom 5,000 cubic centimetres of serum were obtained. As a sufficient number of donors over 10 years of age amongst recently recovered cases could not be found, serum was obtained from persons who had suffered from an attack from five to ten years previously. Careful tests carried out by the Walter and Eliza Hall Research Institute showed that serum from these older cases, as well as that from the recently recovered patients, possessed equal immunizing properties against the local strain of poliomyelitis virus. During 1930 about 300 c.c. of the serum was used in the treatment of ten patients, four of whom succumbed to the disease.

Smallpox.—No cases of smallpox occurred during the year, but some interesting notes will be found on page 51 concerning the occurrence in an elderly man of a drug eruption (due to a preparation of iodine) which very closely resembled the eruption of severe smallpox.

Measles.—A mild epidemic of measles occurred in 1930 (see graph, page 44). This is not a notifiable disease, and the severity of outbreaks can be judged only from the record of deaths. The heaviest toll as shown by available records was in 1875, when there were 752 deaths, equivalent to a rate of 128·6 per 100,000. In 1893 there were 730 deaths, which gave a rate of 60·7 per 100,000. In 1898, 510 deaths (38·9 per 100,000). During the last thirty years the highest incidence rates have been as under :—

Year.	Deaths.	Rate per 100,000.	Year.	Deaths.	Rate per 100,000.
1902	107	7·7	1923	138	6·3
1912	371	21·3	1928	162	6·7
1915	324	17·1	1930	100	4·01
1920	189	9·1			

At the Coast Hospital 566 cases of measles were treated in 1930, an extensive outbreak having occurred in the scarlet fever wards. Convalescent serum prepared in the Microbiological Laboratory was used in connection with the outbreak, and a short note on the results obtained will be found on page 46.

Pulmonary Tuberculosis.—Extension to the whole State of notification of pulmonary tuberculosis resulted in an increase in the number of notifications from 1,215 in 1929, to 1,917 in 1930. Prior to March, 1929, notification had been restricted to the Metropolitan, Hunter River, and Blue Mountain districts.

During 1930 the Department had a local film prepared and widely displayed, showing the activities of the Tuberculosis Division and the various dispensaries and sanatoria.

The report of the Director of Tuberculosis on the activities of the Branch under his control will be found on page 59.

The classification of tuberculosis cases according to (a) lesion, (b) toxicity, (c) X-ray, and (d) sputum examination has been more generally used, and this has assisted considerably in the grading of patients for admission to sanatoria.

Anti-tuberculosis activities are being centred around the dispensaries, where the attendances both of patients and contacts have been gratifying, which give evidence of the good results obtained by the visiting nurses.

At the Waterfall Sanatorium, 881 patients were treated in 1930. The use of gluco-calcium and combinations of iodine and cod-liver or mutton-bird oil, were tested during the year, but the Medical Superintendent states in his report (page 113) that the results were disappointing.

Venereal Diseases.—By a coincidence, the notified cases of venereal disease have only varied by one in the three years 1928, 1929, and 1930, the respective figures being 5,226 in 1928 and 1929, and 5,225 in 1930. The number of cases of syphilis reported showed a notable increase, however, in 1930, there being 1,412 notifications, or an increase of nearly 41 per cent. on the figures (995) for 1929. The number for 1930 is only exceeded by the 2,044 notifications of syphilis received in 1921, the first complete year after the introduction of the Venereal Diseases Act. The Director of the Division is of opinion that the increase can partly be ascribed to a definite rise in the amount of primary syphilis, and partly also to discovery of unsuspected syphilis in persons who have presented themselves for medical examination as a result of Departmental educational propaganda (see Report, page 53).

An opportunity offered during the year of testing the inmates of two of the large State institutions, where elderly indigent men and women respectively are cared for. Of 2,961 men tested, 10·53 per cent. gave a positive reaction; and of 1,004 women tested, 13·64 per cent. were positive.

Tests were made, with negative results, of the blood of 135 children from remote parts of the State who had visited Sydney for the treatment of various disabilities.

Inquiry was made into the methods adopted at the public maternity hospitals to detect syphilis in the expectant mother, and, if discovered, the measures adopted to ensure the birth of a healthy infant. It is probable that about 6½ per cent. of the women confined in public hospitals are syphilitic. If an infected woman is efficiently treated before the sixth month of pregnancy, she should give birth to a healthy child.

As pointed out in previous reports, the most urgent need is for a continuous clinic for males in a central position in Sydney. Many patients have defaulted from treatment at existing clinics because the hours of attendance have been inconvenient, and the waiting long.

Existing clinics at various hospitals are finding it increasingly difficult to carry out their work owing to the financial depression. In various reports the need for adequate facilities for treatment of venereal diseases, and especially syphilis, has been stressed.

The “follow-up” system for the control of patients has been improved. Defaulting patients who ignore letters are now visited, and where it has been possible to get into direct touch with them they invariably resume treatment. Much of the subterfuge is due to lack of confidence on the part of the patient and fear of publicity. As defaulters from treatment are a menace to the community as well as to themselves, the need of an adequate “follow-up” system is obvious, and the steps being taken to evolve a satisfactory method of control are meeting with promising results.

Hookworm Campaign.—The surveys made since 1928 in the North Coast district in conjunction with the School Medical Service were continued in 1930, the area chosen being between Tweed Heads and Coff's Harbour. Bellingen Shire was also visited. In these two areas 237 schools were visited. (Report, page 22).

The following table shows the percentage of infected specimens found among Europeans and aborigines respectively in the years 1928, 1929, and 1930 :—

Year.	Europeans.			Aborigines.		
	Fæces Specimens Examined.	Infected.	Percentage Infected.	Fæces Specimens Examined.	Infected.	Percentage Infected.
1928	6,461	149	2·3	525	159	30·3
1929	6,131	105	1·7	276	102	36·9
1930	8,369	129	1·53	304	148	48·64
Total	20,961	383	1·82	1,105	409	37

Infected aborigines who do not reside on the official reserves are a source of anxiety as, owing to their migratory habits, they are likely to continue the spread of infection.

The marked difference between the incidence rate of coloured persons (37 per cent.) and whites (1·8 per cent.) shows very clearly that the hookworm problem is at present practically confined to aborigines, of whom there are in the Northern Rivers District about 1,400, or approximately ·59 per cent. of the total population of that area, which is estimated to be 237,000.

The efforts so far made to bring about a reduction in the incidence of hookworm in this State have been attended with some measure of success so far as the white population is concerned, but the same cannot be said of the coloured people. It is evident that the work in this field should be continued in the future. The scheme in operation at present cost about £1,800 in 1930. This expenditure is shared by the Commonwealth and the two State Departments of Education and Health. Consideration is now being given to the inauguration of a scheme which will entail much less expenditure, and which will probably bring about better results.

DIVISION OF MATERNAL AND BABY WELFARE (page 26).

The maternal mortality rate for 1930 was 4·9, which is a slight increase over the rate (4·6) in 1929.

Puerperal infection was made notifiable in New South Wales on 16th August, 1929, and 44 cases were reported between that date and 31st December. In 1930, private practitioners co-operated more actively with the Department, and 269 cases were notified during the year. A description is given on page 29 of the requirements for notification of cases of puerperal pyrexia and puerperal infection respectively; of the “follow-up” methods of investigation; and the supervision exercised over hospitals in which such a case has occurred. Every death from puerperal sepsis was the subject of exhaustive investigation by officers of the Division during 1930. So far the completed returns do not justify any comprehensive tabulation of results, and it will be necessary to continue the analyses for another year at least before any conclusions of value can be made.

The Director of the Division again directs attention (page 27) to the many disquieting facts elicited during the investigations associated with maternal deaths, and to the increased incidence of miscarriages and abortions demonstrated by a study of the records of the Coast Hospital, where the majority of metropolitan cases of sepsis following abortion are treated. These records show that in 1919, out of a total of 3,210 female patients treated at that hospital, there were 54 cases of abortion (1·7 per cent.), while in 1930, with a total of 6,090 female patients, the number of abortions had increased to 887 (14·5 per cent.).

In stressing the importance of ante-natal care, Dr. Morris refers to the slow progress made owing to the majority of women refusing to seek or accept ante-natal supervision even when it is offered. Over 5,000 expectant mothers visited the Baby Health Centres in 1930, but the attendances were mainly for advice *re* baby clothes, or to obtain milk orders. At the ante-natal clinic opened at Newtown in June, 1929, there were 871 attendances in 1930. At the time of writing weekly ante-natal sessions are being held at nine other suburban Baby Health Centres, so placed that they are within reasonable access of every suburb of Sydney, so that every expectant mother in the metropolis desiring to obtain advice and supervision may do so without having to travel an unduly long distance.

Infant Welfare Work continues to expand and show gratifying results in a steady fall in the infant death-rate, which in 1930 was 49·50 per 1,000 births. More than one-half of these deaths occurred during the first month of life, and the majority of these within the first few days. The investigations into neo-natal deaths confirm the view that the underlying factors are the same as those which underlie maternal deaths, the neo-natal deaths occurring mainly among premature infants, or from injuries after difficult deliveries, or as sequels to toxæmias of pregnancy.

Attendances at the Baby Health Centres have increased steadily year by year since their inauguration, and in 1930 numbered 408,136, an increase over 1929 of 56,976 attendances. Infants under one year old predominated, the total attendances by them being 340,871, or 46,402 in excess of the figures for 1929.

Only four new centres were established in 1930, bringing the total to 84—39 metropolitan and 45 country. The new centres opened were at Young, Cowra, Inverell and Temora.

Many other country towns are awaiting centres, the rooms and equipment, in most cases, having been supplied by the local branch of the Country Women's Association, but until the economic situation permits of the appointment of more nurses advantage, unfortunately, cannot be taken of these offers of co-operation.

INDUSTRIAL HYGIENE (page 66).

At the invitation of the International Labour Office of the League of Nations the Medical Officer of Industrial Hygiene (Dr. Charles Badham) attended the International Silicosis Conference at Johannesburg as the Australian nominee of that body. A full account of this conference has been recently published by the International Labour Office.*

South Coast Coal Miners.—An important investigation into the extent of fibrosis of the lungs among these miners was undertaken in conjunction with the Commonwealth Division of Industrial Hygiene, and the results were recently published†. Pathological and clinical studies are now in progress, particularly in regard to dust exposure and the action of dusts in these mines on laboratory animals with special reference to the reactivation of tuberculosis.

Bakers Dermatitis.—Investigation of this condition has been continued (see page 71 of this report).

Ventilation of Cinemas and Picture Shows.—These investigations have been continued throughout the year.

Bulk Wheat, &c.—Various types of occupational disease have been diagnosed which have arisen in connection with the handling of bulk wheat, soda ash and other substances.

Refrigeration Safety Code.—Attention has been given in conjunction with a Committee of the Standards Association of Australia to the formulation of a safety code in connection with refrigerating installations.

MICROBIOLOGICAL LABORATORY (page 122).

Specimens submitted for bacteriological and pathological examinations in 1930 numbered 57,905, an increase of 14,905 (or approximately 25 per cent.) on the figures (43,817) for 1929; details of the examinations carried out are given in the comparative statement on page 124. Between May, 1927, and December, 1930, 261 samples of mixed milks from dairy herds were tested, in connection with the bacteriological supervision of the Sydney milk supply, and the results are tabulated on page 127. Reassuring evidence was again obtained of the absence of tubercle bacilli.

Harbour Pollution.—At the request of the Sydney Harbour Trust examinations were made of 118 samples of water taken from sixteen sections of Port Jackson. At times it was found that there is considerable bacteriological pollution in certain limited areas of the harbour.

Psittacosis or Parrot Disease.—An investigation was made concerning the deaths at Roseville of a number of indigenous parrots. The results were negative for psittacosis infection.

Measles.—In connection with an outbreak of measles in the scarlet fever wards at the Coast Hospital about 800 cubic centimetres of serum from recovered cases of measles was prepared in the Laboratory and used at the Coast Hospital with satisfactory results (see page 46).

CHEMICAL LABORATORY AND PURE FOOD BRANCH.

The Acting Government Analyst (page 14) reports that 22,194 samples were examined in 1930 in the Branch under his control, an increase of over 1,500 on the total for any previous year. 19,705 of the samples were submitted in connection with the Pure Food Act, and the balance in relation to various other public services. Particulars of the detected adulterations and sophistications are given on page 16.

Investigational work was carried out in connection with the use of preservatives in beer; saponin ("heading") in beverages; saccharin in foods; butter substitutes (which were found to consist of large proportions of cocoanut fat); and in the fixation of standards for citrus fruit juices and jam. A number of fruits and vegetables were examined for evidence of poisonous residues from spraying mixtures.

Three hundred and seven exhibits were received from the Police Department in connection with criminal investigations and prosecutions under the Dangerous Drugs Act; and coroners submitted material in connection with 85 uncertified deaths, in 44 of which it was possible to determine the cause.

Investigations in respect of occupational diseases and industrial hygiene comprised 233 specimens consisting of excretions, hair, nails, paint, air, &c.

Pure Food Examinations, Inspection of Food Premises, &c.—The Chief Pure Food Inspector reports (page 19) on the work carried out in the Metropolitan and Country districts by the fourteen pure food inspectors attached to his staff. Inspections included examinations of 12,181 premises used for or in connection with the preparation, sale or storage of food. 244 traders were successfully prosecuted for dusting the surface of fresh meat with preservative powder. In all, 657 prosecutions were undertaken during the year in connection with food adulteration, unclean premises, &c., and a total of £2,546 was imposed in fines and costs.

METROPOLITAN MILK ACT, 1929.

Under this Act, which was proclaimed at the beginning of 1930, the Milk Board has powers in regard to the regulation and control of the supply and distribution of milk within the Metropolitan milk area. In addition to the definite statutory provisions of the Act itself by-laws may also be made. In regard to the latter it is provided that any by-laws made under the Act which deal with grades of milk, the bottling of milk, methods of treatment and other sanitary requirements must, before being submitted to the Governor for his approval, be submitted to the Board of Health for its concurrence and shall not be made unless the Board of Health concurs.

During the year by-laws made by the Milk Board dealing with standards for raw and pasteurised milk were gazetted.

* Studies and Reports, Series F (Ind. Hyg.), No. 13, Geneva, 1930.

† Moore and Badham, *Health* (Comm. of Aust.), Vol. 9, 1931, p. 33.

It was considered desirable that any standards for milk fixed under the Metropolitan Milk Act, which applies to the Metropolitan Milk Area, should agree with the standards for milk laid down by regulation under the Pure Food Act, which applies to the whole State, and the same may be said in regard to other sanitary requirements so far as they are applicable.

As the Pure Food Act is administered by the Board of Health, which has an Advisory Committee to aid it in fixing food standards and framing regulations dealing with the sanitary requirements of food premises, the position given to the Board of Health in relation to by-laws under the Milk Act makes it possible to effect a considerable degree of uniformity so far as the provisions of the Pure Food Act and the Metropolitan Milk Act apply to this most important food stuff—milk.

Wine Adulteration Act of 1902, as amended by Act No. 33 of 1916, was transferred to the Health Department for administration on 22nd July, 1930. Hitherto it had been administered by the Department of Agriculture.

SYDNEY ABATTOIRS.

Transfer to the Metropolitan Meat Board in 1930 of the five remaining meat inspectors attached to the staff of the Health Department brought to an end the active participation of the Board of Health in the management of the Sydney abattoirs, first brought about in 1894 under section 16 of the Cattle Slaughtering Act.

The Board of Health assumed active management of the Glebe Island Abattoir on 1st July, 1894, but did not have financial control until the Sydney Abattoir and Nuisances Act became law on 20th August, 1902. This Act vested the Board with both administrative and financial control of the abattoir which at that time yielded a revenue of £10,000 per annum. The Board of Health successfully managed Glebe Island Abattoir until it was supplanted by the modern abattoir buildings constructed at Homebush Bay, which were taken over by the Metropolitan Meat Industry Board in 1916.

The Glebe Island buildings—Sydney's first abattoirs—were erected under Act No. 36 of 1850 which provided that from and after the establishment and completion of the abattoir no slaughtering would be allowed within the limits of the city or within a distance of three miles therefrom except at the public abattoir. This Act superseded the Act of 1835, under which licenses had been granted for slaughtering at various places in the City of Sydney.

The buildings at Glebe Island were begun about 1855, but were not completed until 1864, although various sections were put into use before that date, and a superintendent and an assistant were appointed in 1860.

Public enquiries concerning abattoir management, location, &c., were held from time to time by specially appointed Boards and Parliamentary Select Committees. In 1879 a Board enquired into allegations appearing in the daily press under the heading "Butchers and Butchers' Meat" and reported that "The inspection carried out at the abattoir is a perfect failure," and recommended such revision of the regulations as would give inspectors additional powers, more especially for the detection and complete destruction of diseased and unfit meat, &c.

Enquiries were held by Parliamentary Select Committees in 1896, 1903, 1909, 1911 and 1913, but were mainly in respect of removal of the abattoir to a less populous neighbourhood, allegations of cruelty to stock in transit by rail and road, accommodation and site of saleyards, &c.

SANITATION, RURAL AND GENERAL.

A report on the routine and general inspections carried out by inspectors attached to the Sanitation Branch are included on page 21. The systematic supervision exercised by these officers over the sanitary administration of country towns and village settlements is without doubt largely responsible for the declining typhoid rate, which in 1930 had fallen to 1 per 100,000 in comparison with a rate of 30 per 100,000 before these regular inspections were instituted.

Tests are being made to determine the suitability of what are known as post hole borer closets for use at temporary works, camps, &c. This type of sanitary convenience has recently come into fairly extensive use in Fiji and other tropical settlements.

Complaints of pollution of Sydney ocean beaches by the washing up of garbage and refuse prompted to sea necessitated extensive enquiries. The Sydney Harbour Trust has now issued amended regulations to enforce covering of the garbage during transit and its dumping at least three miles out at sea.

Murray River Pollutions.—Special inspections during the year included sanitary surveys of twenty-two towns and villages along the New South Wales border of the Murray River to ascertain whether pollution was taking place; a similar inspection being carried out along the opposite side of the river by Victorian health officials.

Lord Howe Island.—An officer of this Branch also visited Lord Howe Island to enquire into an outbreak of scarlet fever there during the summer of 1929–30. A note on the conditions obtaining on the Island will be found on page 45.

REPORTS OF MEDICAL OFFICERS OF HEALTH (pages 77–91).

Metropolitan District.

The Medical Officer of Health for the Metropolitan Combined District reports that in 1930 the death rate for the metropolis was 8·71 per thousand, in contrast to 10·15 for 1929, and the infantile mortality rate 49·94 in comparison with 56·52 per 1,000 births in 1929. The combined metropolitan district comprises an area of about 652 square miles, with an estimated population at 31st December, 1930, of 1,333,840 persons.

Sewerage Facilities, Sanitary Depots, &c.—In making a sanitary survey for 1930 it was estimated that at 30th June there were in the metropolitan area 200,320 sewered and 67,181 unsewered dwellings, these latter containing a population of approximately 323,000 persons. In connection with the sanitary services to these unsewered dwellings there still exist in the metropolitan area twenty-four burial depots for excreta, nine dumps where it is tipped into sewers, two localities where it is passed into the ocean, and one depot where it is converted into poudrette by drying.

Septic tanks are largely made use of in the unsewered area. In 1930, 150 installations were inspected and approved, and 311 sites were examined as to their suitability for septic tank installations.

There was a Supreme Court decision of interest during the year, the proceedings being based on the ground that the Cabramatta Council's contractor had not buried excreta strictly in accordance with the requirements of the Local Government ordinance. Although a considerable amount of evidence was adduced in favour of more superficial burial, judgment was delivered against the Council for not previously obtaining the approval of the Board of Health to the method employed in accordance with the requirements of the ordinance. Subsequently fifteen local authorities, including Cabramatta, secured the necessary approval to bury excreta at a depth of not less than 8 inches by forthwith covering it with not less than 6 inches of earth.

Garbage Disposal.—Two incinerators (Bexley and Kuring-gai Councils) were installed during 1930; Randwick Municipality is erecting an incinerator near Matraville, and at Paddington and Marrickville extensive additions were made to existing incinerators. Of the fifty-five municipalities comprised in the metropolitan combined district, thirty-three still rely on dumps for disposal of garbage. In some cases controlled dumping satisfactorily reclaims waste land. This was shown at Concord, where a foul smelling mangrove-swamp area on the Parramatta River has been converted into a recreation ground of 18 acres, an example which might be followed with advantage by other municipalities.

Baths and Swimming Pools.—In a review of the baths and swimming pools available in and around Sydney, the Medical Officer of Health remarks that the public is gradually being educated to realise that water is not safe to bathe in unless it is safe to drink, a standard only possible in respect of freshwater baths by the process of filtration and continuous sterilization or chlorination.

Parks and Playgrounds.—It is claimed that local authorities in the metropolitan area should allocate not less than 10 per cent. of their ground space to recreation purposes. In furtherance of this claim the Surveyor-General has been commissioned to inquire into the needs of the metropolitan area for spaces for playing grounds and parks. The city proper is well provided with open spaces, 19 per cent. of its area being reserved for recreation purposes.

NEWCASTLE AND HUNTER RIVER DISTRICT (page 87).

The health of Newcastle and surrounding districts continued to show steady improvement, the death-rate being 8.11, compared with 8.54 for the whole State. There were no serious epidemics, and the incidence of scarlet fever, diphtheria, and typhoid fever were all below the average of the previous five years.

The lowered incidence of typhoid fever (26 cases compared with an average of 60 during the previous five years) is particularly gratifying, and makes a new record for the district, notwithstanding that several cases included in the figures were imported cases from a ship in which the infection had been contracted overseas. Extension and strict supervision of sanitary services, increase of sewered areas in the suburbs, and the improved water supplies were probably all instrumental in attaining the result. The Medical Officer of Health reports that prophylactic inoculation with T.A.B. is becoming more popular in this large mining and industrial centre, and that this may, in part, account for the diminished typhoid incidence.

The district remained free from dengue fever during the year. Most of the district Councils have adopted the ordinance empowering enforcement of anti-mosquito measures, and where this has been done a steady diminution in the prevalence of *Aedes argenteus* is reported. Experiments at Newcastle and Cessnock with the Queensland water plant *Nitella phaulotoles* were disappointing. This plant was described as having larvicidal and mosquito-repellant properties, but in the Newcastle district, where the plant grew well, it was found that mosquitoes bred freely in water in which the plant was growing.

Garbage and Refuse Disposal.—During 1930 the problem of garbage disposal received considerable attention, and at least one Council decided to establish a modern incinerator, an important step forward towards improving the sanitation of the district.

Meat Supply.—Newcastle and the district for a radius of 14 miles from the abattoir at Waratah are supplied with meat from animals which are slaughtered under hygienic conditions and adequately inspected. Outside of this area the methods of inspection and slaughter leave much to be desired. As the coalfields districts of Cessnock and Maitland have failed to reach an agreement concerning erection of abattoirs, it seems likely that, as a temporary expedient, killing will be concentrated in slaughter-houses of an improved type in various centres, and supervised by qualified inspectors.

Disastrous floods affected the lower Hunter Valley about the middle of 1930, but they did not account for any ill-health, and conditions returned to normal in a short space of time.

The Medical Officer of Health again directs attention to three outstanding needs of his district, viz., (1) increased accommodation for cases of infectious diseases; (2) provision of adequate treatment for venereal diseases, the present facilities for which, he states, are still quite inadequate; and (3) a full-time Pure Food Inspector for continuous duty in the district.

BROKEN HILL DISTRICT (page 91).

The Medical Officer of Health reports that typhoid fever was again prevalent. The notified cases for the past three years were 49 in 1928, 64 in 1929, and 95 in 1930. The municipal local authority appointed an additional sanitary inspector in 1930, and more active measures are being taken to get rid of the insanitary conditions which favour the breeding of flies, which are probably the chief cause of spread of infection. Owing to the deficient water supply at Broken Hill, the installation of a sewerage system is not practicable, and excreta must perforce be dealt with by means of a pan service, a method not without danger in an area where heat, dust and flies prevail for many months of the year.

Dr. George states that the four Baby Health Centres have supplied a great deal of advice to mothers, and, no doubt, are largely responsible for the small number of cases of gastro-enteritis amongst children in the district during the summer months.

The branch of the Microbiological Laboratory established at the Broken Hill Hospital has provided a satisfactory service both for the hospital and the practitioners in the town and a great number of both bacteriological and bio-chemical examinations have been carried out.

DIVISION OF STATE HOSPITALS.

Coast Hospital.—The Medical Superintendent of the Coast Hospital (page 92) states that the number of admissions for 1930 was 547 more than in 1929, the figures for the respective years being 10,454 (infectious cases, 3,498) in 1929, and 11,001 (infectious cases, 3,568) in 1930. The total cost for the 11,715 patients under treatment during 1930 was £123,057, or an average cost per bed of £162 7s., compared with an average cost of £172 12s. in 1929. Collections from patients amounted to £15,398, so that the actual cost of maintenance was £107,639.

During the year a new X-ray plant was installed, and a start made with the erection of quarters for the Resident Medical Staff. In addition to improvements undertaken by the Public Works Department, a very considerable amount of repair work and minor alterations were carried out by the hospital staff.

The Leper Lazaret at Little Bay is under the direct supervision of the Medical Superintendent of the Coast Hospital. During 1930 four persons were admitted to the Lazaret, and four persons died. At the end of the year twenty persons (seventeen males and three females) remained under detention.

STATE HOSPITALS AND HOMES.

Lidcombe State Hospital and Home (page 116).—The total accommodation at this Institution comprises 1,693 beds, of which 972 are in the hospital and 721 in the home division. In his report the Medical Superintendent calls attention to the increasing practice by metropolitan and country hospitals of unloading on to this hospital their chronic cases, which has resulted in its gradual evolution into a hospital rather than a home, and this alteration, involving, as it does, increased medical attention adds support to the request which has been made already for an increase in the Resident Medical Staff.

The opening during 1930 of an X-ray department and erection in the Institution grounds of the first unit (fifty beds) of an infectious diseases hospital for the western suburbs points to the likelihood of the Institution developing more and more into a general hospital.

Liverpool State Hospital for Men (page 117) contains 757 beds, 392 of which are in the hospital division and 465 in the home section. In the hospital section there are twenty-five beds reserved for ordinary male medical and surgical cases from the surrounding district. The number of inmates during July, 1930, reached a total of 889, and the accommodation in the Institution has been severely taxed during the greater part of the year.

Improvements in progress comprise erection of nurses' quarters, manager's residence and a recreation hall for use of the inmates. The erection of the two last-mentioned structures led to the demolition of the old disused Moore College building, which occupied portion of the site.

Newington State Hospital and Home for Women (page 119).—The average daily number of women resident in 1930 was 654. Beds in the hospital division number 373, and in the home section 306. Additions carried out during the year included erection of a commodious shelter room and library, and much needed improvements to some of the quarters. Plans have been prepared for erection of nurses' quarters, but the work is still in abeyance.

Revenue Collections.—Payments into revenue from the various State Hospitals and Homes during 1930 (excluding the Coast Hospital and Waterfall Sanatorium) amounted to £30,792, which reduced the total cost of upkeep to £170,380, or an annual maintenance cost of £51 1s. 3d. for the daily average of 3,696 persons during 1930.

Appreciative thanks are tendered by the Department to the honorary medical officers on the staffs of the various State Hospitals and Homes who gratuitously give their service for the alleviation of the sufferings of the sick, and also to the many benevolent citizens and the members of the various societies who so willingly provide entertainment and additional comforts for the old folk.

CLOSING OF MONTROSE MATERNITY HOSPITAL (BURWOOD) AND FERNLEIGH REST HOME (ASHFIELD).

Montrose Maternity Hospital, Lucas-road and Waimea-street, Burwood, which was opened on 17th January, 1920, was closed as a maternity hospital on 12th May, 1930. The premises have since been taken over by the Child Welfare Department.

When in use as a maternity hospital it was utilised for those persons whose financial position warranted their being cared for gratuitously, the cases received being the poorer people in crowded suburban areas.

Montrose was a recognised training school, and was used for the training in midwifery of certificated general nurses employed by the Department.

Fernleigh Rest Home, Victoria-street, Ashfield, was opened in January, 1920, for indigent pre- and post-maternity cases. When it was decided to close Montrose the Fernleigh Home was no longer required and was vacated on 31st January, 1930.

The property was sold by the Crown to the United Grand Lodge of Freemasons for use as a hospital

DIABETES MELLITUS AND INSULIN TREATMENT.

In July, 1927, provision was made for this Department to supply insulin to indigent diabetic patients who were otherwise unable to obtain it. On creation of the Hospitals Commission this service was regarded as properly falling within the scope of its activities, and it was therefore discontinued by the Department at the end of June, 1930.

CEMETERIES, EXHUMATIONS, CREMATORIA.

Generally speaking, it is usually only when questions of nuisance and other conditions likely to affect health are involved that the subject of cemeteries comes under notice of this Department. The question of providing necessary areas for burial purposes is dealt with by the Lands Department.

Apart from exhumations brought about by the Department of Justice, there are circumstances which render necessary the removal of remains from one grave to another in the same or some other burial ground. Also the removal of the bones of Chinese interred in the State is not infrequently sought. A number of requirements must be complied with before a permit is granted by this Department to exhume the remains in any one of the cases mentioned. Permission is not granted when the registered cause of death has been one of the dangerous infectious diseases, such as anthrax, plague, smallpox. Exhumations are always carried out under the supervision of the police authorities and a fee is charged by the Department for each permit issued. During 1930 a sum of £270 was received from this source.

Cremations.—Under the Public Health Act, 1896, power was given to local authorities and the trustees of any burial ground or cemetery to erect and maintain crematoria for the burial of the dead, subject to regulations made by the Governor in that behalf. No action was taken under this statute by any such authority in this State. Similar powers were granted local authorities under the Local Government Act of 1919. In an amendment to the Necropolis Act, 1923 (which statute deals with the large cemetery at Rookwood) provision was made for the Governor to set aside by proclamation an area of land within this burial ground for use in connection with a crematorium, and to appoint trustees and vest such land in the trustees for use in connection with a crematorium. The trustees were empowered themselves to erect and maintain a crematorium and other necessary buildings or they could, subject to approval by the Governor, grant a lease of this land to enable the area to be used by the lessee for the erection and maintenance of a crematorium.

Powers were taken under this Act to amend the Public Health Act, 1902, by way of providing for the making of regulations by the Governor for the control of crematoria, disposition of the ashes, necessary certificates and declarations required before cremation, &c., &c. A code of regulations modelled on those in operation in Great Britain was gazetted in 1925. These regulations were subsequently slightly amended in 1929.

A crematorium was erected at Rookwood in 1925, and its establishment is due in great measure to the efforts of the late Dr. John Mildred Creed, M.R.C.S. Eng., M.L.C., who, for over forty years, was a persistent advocate of cremation. His efforts were rewarded by the formation in 1923 of the Cremation Society of Australia (of which he was the General President), and the establishment of the Cremation Company of New South Wales, with a capital of £5,000 in 20,000 shares, for the purpose of erecting a crematorium on the land set aside for the purpose at the Rookwood Cemetery.

This crematorium was used for the first time in May, 1925, and between that date and 31st December, 1930, there have been 2,118 cremations, the yearly totals being—May to December, 1925, 58; 1926, 138; 1927, 267; 1928, 400; 1929, 553; 1930, 702.

FEDERAL HEALTH COUNCIL.

The fourth session of this Council, which is composed of representatives of the Federal Health Department and the chief administrative medical officers from each of the States, was held at Canberra during the year. Amongst the subjects dealt with at this conference were the control of Tuberculosis, Hookworm, Undulant Fever, and Maternal and Infant Hygiene. Following the meeting of the Council a joint meeting took place with members of the Conference on Industrial Hygiene, which was being held at Canberra at that time. The principal subjects dealt with at this conjoint meeting were pulmonary diseases in employees engaged in metalliferous mining, medical inspection of food handlers, accident prevention.

School of Public Health and Tropical Medicine.—In connection with the School of Public Health and Tropical Medicine at the Sydney University, which was opened in the early part of the year, very practical co-operation has been established between the school and the State Health Department. Lectures on special subjects are given by medical members of the Health Department staff; and use is made by the School for study and demonstrative purposes of the Venereal Disease Clinics, the Infectious Diseases Division of the Coast Hospital, the Lazaret, &c.

STAFF CHANGES.

Mr. Blomfield was appointed as Chairman of the Milk Board on 12th May, 1930, and thus terminated a period of thirty years' service in the Department, the last eleven and a half of which had been in the capacity of Chief Dairy Inspector.

On 1st July, 1930, the staff of seventeen dairy inspectors was transferred to the Department of Agriculture in connection with the handing over to that Department of the administration of the Dairies Supervision Act.

Mr. W. M. Doherty, F.I.C., retired from the position of Government Analyst on 17th November, 1930, after nearly forty-four years' service in the Department.

HEALTH PUBLICITY AND PROPAGANDA.

A booklet, entitled "Healthy Motherhood," was issued during the year, and this and the Health Week booklet, "Health Makes the Commonwealth," have been widely circulated.

Articles are regularly supplied to the city, suburban and country newspapers, dealing with various activities of the Department, particular attention being devoted to maternal and baby welfare, prevention and treatment of venereal disease, and tuberculosis.

A departmental film was issued in 1930 showing the work of the Tuberculosis Division. This film was widely shown and attracted much interest.

T. H. NEELY,
Secretary.

ROBERT DICK,
Director-General of Public Health.

Extract from Report by the Government Statistician on the Vital Statistics of New South Wales for the year 1930.

From the beginning of the year 1927, all births have been allocated to the usual place of residence of the mother, and deaths to the usual place of residence, where known, of the deceased. Consequently, in Table No. 3, showing births and deaths in divisions of the State, comparisons with previous years have been omitted.

Population.—The population at the end of 1930 was 2,502,039, of whom 1,271,356 were males and 1,230,683 females, the proportion being 103 males to 100 females. During the year the population increased by 22,892, or, .92 per cent., of which 30,884 was due to the excess of births over deaths, and 7,992 to the excess of departures over arrivals. The mean population was 2,489,657.

Marriages.—The number of marriages was 17,383, corresponding to a rate of 6.98 per 1,000 of the population. In the metropolis the rate was 7.91, and in the remainder of the State 6.05 per 1,000 population.

The proportion of males married who were under 21 years of age was 8.06 per cent., and of females 29.07 per cent.

Of the marriages, 15,886 were celebrated by the clergy and 1,497 by registrars. The largest number, 7,133, was celebrated according to the rites of the Church of England; then followed the Roman Catholic Church with 3,614, the Presbyterian with 2,195, the Methodist with 1,970, and all others, 974.

Births.—The total number of births was 52,136, equivalent to 20.94 per 1,000 of population. Of this number, 26,642 were males and 25,494 females, the proportion being 105 males to 100 females.

Dividing the State into the metropolis and remainder of the State, there were 21,927 births in the former and 30,209 in the latter, corresponding to rates of 17.60 and 24.28 respectively.

The number of ex-nuptial births was 2,541, equal to 4.87 per cent. of total births. In the metropolis the proportion was 5.4, and in the remainder of the State 4.5 per cent. of births. Proportionately to population, ex-nuptial births represented 1.02 per 1,000.

Deaths.—The deaths during the year numbered 21,252, equivalent to a rate of 8.54 per 1,000 of the population.

The total includes 12,140 males and 9,112 females, equivalent to rates of 9.59 and 7.45 respectively per 1,000 of population. The rate in the metropolis was 8.71 per 1,000, and in the remainder of the State 8.36. Of the 21,252 people who died during the year, 3,588 were under 5 years of age, 9,361 were aged from 5 to 64, and 8,297 were 65 and over. The ages of the remaining six adults were not specified. The rates per 1,000 living in the main groups, under and over 5 years, were 14.22 and 7.89 respectively.

Infantile Mortality.—The number of children under 1 year of age who died was 2,597, equal to 49.81 per 1,000 births. To this total the metropolis contributed 1,095, or 49.94 per 1,000 births, and the remainder of the State 1,502, or 49.72 per 1,000 births. Of the deaths under 1 year of age, 1,191, or 46 per cent., occurred under 1 week, 1,485, or 57 per cent., under 1 month, and 1,756, or 68 per cent., under 3 months.

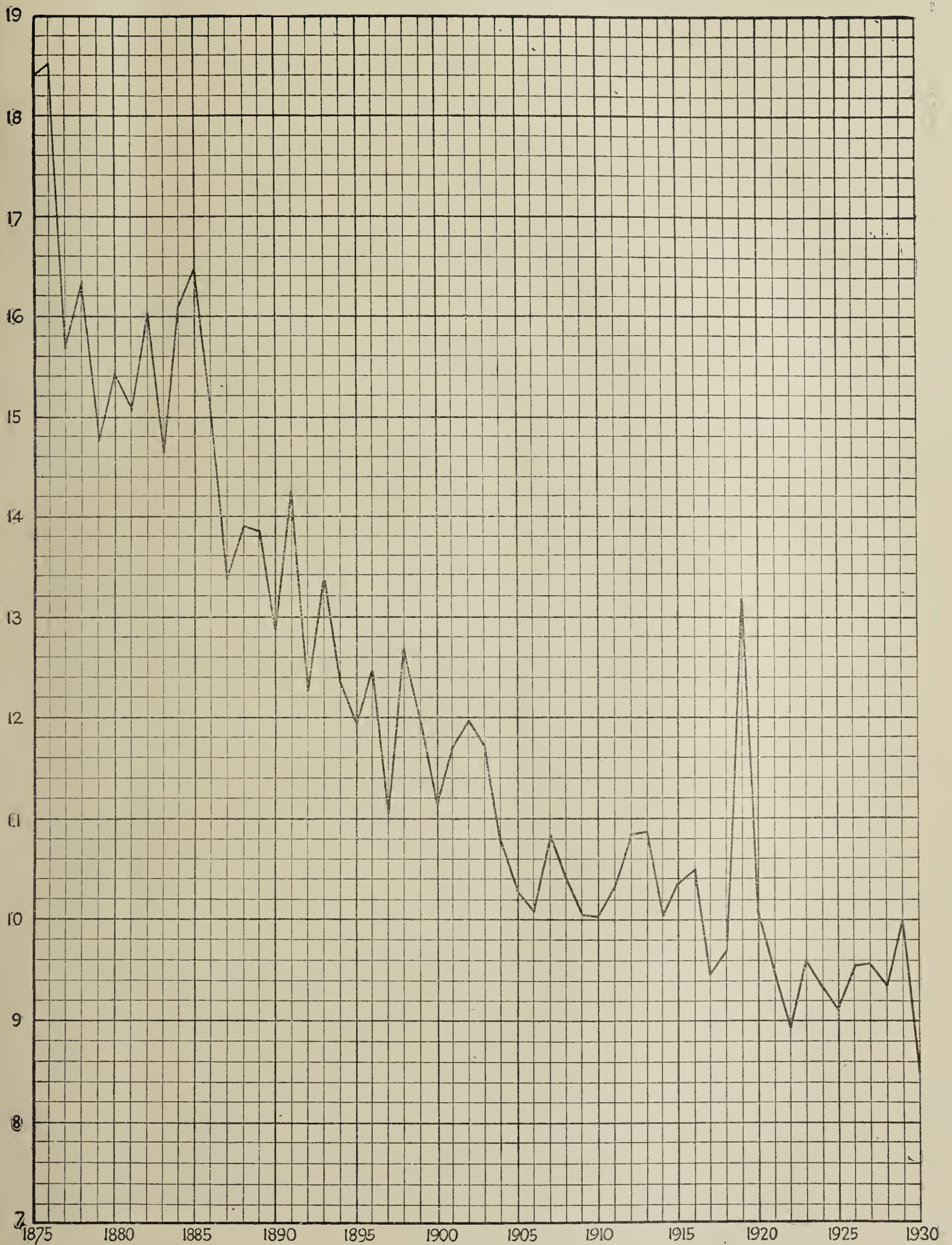
Causes of Death.—Of the deaths during the year, the most important causes were as shown in the following statement :—

Causes of Death.	1929.	1930.	Causes of Death.	1929.	1930.
Typhoid and Paratyphoid Fever	45	48	Other Diseases of the Circulatory System.....	86	122
Measles	66	100	Bronchitis.....	508	363
Scarlet Fever	78	54	Pneumonia	2,216	1,275
Whooping-cough	212	164	Other Diseases of the Respiratory System	327	277
Diphtheria and Croup.....	215	176	Diseases of the Stomach.....	136	109
Influenza	541	129	Diarrhoea and Enteritis (under 2 years).....	474	557
Plague .....	...	...	Diarrhoea and Enteritis (2 years and over).....	167	160
Erysipelas.....	57	40	Appendicitis	216	211
Infantile Paralysis	17	6	Hernia, Intestinal Obstruction.....	217	199
Lethargic Encephalitis	30	20	Cirrhosis of the Liver.....	111	108
Epidemic Cerebro-spinal Meningitis.....	10	12	Other Diseases of the Digestive System	396	398
Other Epidemic Diseases	51	43	Bright's Disease (Acute and Chronic)	1,367	1,300
Tuberculosis, Respiratory System	1,151	1,022	Other Genito-Urinary Diseases	469	419
Tuberculosis, Meninges and Nervous System...	65	43	Puerperal Septicaemia.....	199	80
Other Tuberculous Diseases	91	79	Other Puerperal Diseases	79	224
Cancer	2,322	2,290	Malformations	269	215
Diabetes.....	315	272	Congenital Debility.....	224	177
Leucaemia, Anaemia, Chlorosis.....	174	182	Premature Birth	886	831
Other General Diseases	560	564	Other Developmental Diseases.....	310	283
Meningitis.....	181	100	Senility.....	1,050	896
Cerebral Haemorrhage and Apoplexy*	854	768	Suicide	301	361
Insanity	95	69	Accident	1,431	1,226
Convulsions of Infants	30	19	All other Causes	335	332
Other Diseases of the Nervous System*	679	566			
Diseases of the Heart.....	4,102	3,421			
Diseases of the Arteries, Atheroma, &c.*.....	900	942	Total.....	24,615	21,252

* See paragraph page below "Cerebral Haemorrhage."

ANNUAL DEATH RATE.

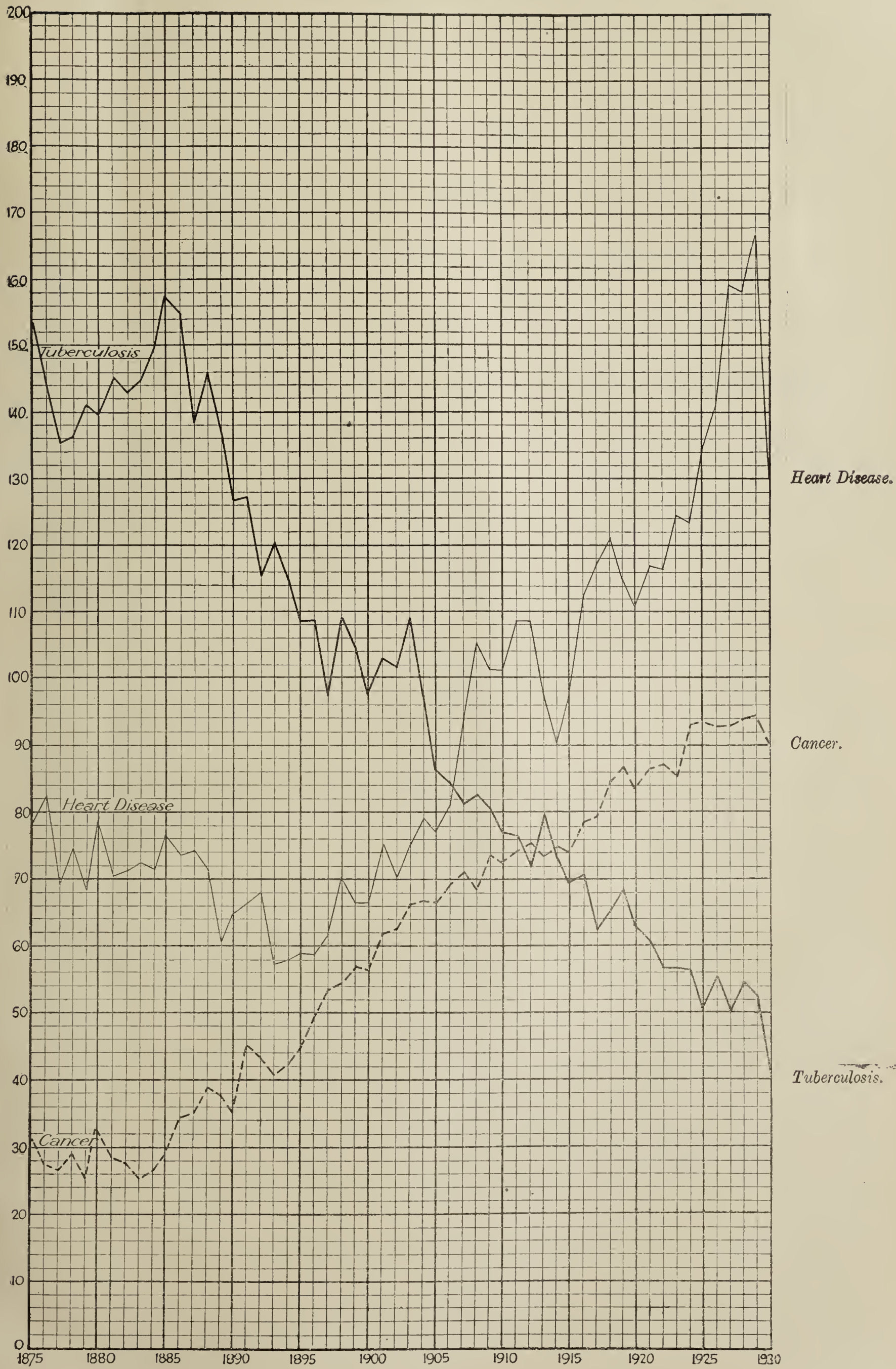
Per 1,000 of the Population in New South Wales, 1875-1930.



1919—Influenza Epidemic
(deaths, 6,387).

CANCER, TUBERCULOSIS and HEART DISEASE.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1930.



Epidemic Diseases.—The deaths from epidemic diseases numbered 792. The deaths from scarlet fever numbered 54.

Tuberculosis of the Respiratory System was the cause of 1,022 deaths in 1930, the rate being .41 per 1,000 living. The deaths of males numbered 614, and of females 408, and the rates per 1,000 living were .48 and .33 respectively.

Cancer.—The deaths from cancer numbered 2,290, equal to a rate of .92 per 1,000 living. The deaths of males numbered 1,212, and of females 1,078, the rates for each sex being .96 and .88 per 1,000 respectively.

Cerebral Hæmorrhage.—To cerebral hæmorrhage and apoplexy during 1930 were ascribed 768 deaths, of which 373 were those of males and 395 of females. The rate was .31 per 1,000 living, or .29 for males and .32 for females.

Diseases of the Heart were the cause of 3,421 deaths, the rate being 1.37 per 1,000. Of the total deaths, 1,934 were of males and 1,487 of females, the corresponding rates per 1,000 living of each sex being 1.53 and 1.22.

Bronchitis and Pneumonia.—Bronchitis with 363 deaths, equal to a rate of .15 per 1,000 living, and pneumonia with 1,275 deaths, or .51 per 1,000.

Of the deaths from bronchitis, 197 were of males and 166 of females, or .16 and .14 per 1,000 living respectively. Of the persons who died from pneumonia, 705 were males and 570 were females, and the rates were .56 and .47 per 1,000 living of each sex.

Bright's Disease.—During 1930 there were 1,719 deaths due to diseases of the genito-urinary system, of which 1,300 were caused by acute nephritis and Bright's disease. The rate for nephritis (acute and chronic) was .52 per 1,000 living; for males .59 per 1,000, and for females .45 per 1,000.

Diseases of Infants.—The principal causes were prematurity 830, other developmental diseases 661, diarrhœa and enteritis 416, pneumonia 236, whooping-cough 105, bronchitis 43, measles 19, and convulsions 15.

The following statement shows the causes of deaths of children under 1 year of age per 1,000 births during 1930 :—

Causes of Death.	Males.		Females.		Total.	
	Number.	Rate.	Number.	Rate.	Number.	Rate.
Epidemic Diseases	88	3.30	92	3.61	180	3.45
Tuberculous Diseases	6	.23	13	.51	19	.37
Syphilis	14	.53	8	.31	22	.42
Meningitis	17	.64	4	.16	21	.40
Convulsions	10	.37	5	.20	15	.29
Bronchitis	25	.94	18	.70	43	.82
Pneumonia	128	4.89	108	4.24	236	4.53
Diarrhœa and Enteritis	241	9.05	175	6.86	416	7.98
Premature Birth	481	18.05	349	13.69	830	15.92
Other Developmental Diseases	401	15.05	260	10.20	661	12.68
Other Causes	94	3.53	60	2.35	154	2.95
All Causes	1,505	56.49	1,092	42.83	2,597	49.81

SECTION I.

A.—Public Health Administration.

	PAGE.
Chemical Laboratory: Report of the Acting Government Analyst (Mr. S. G. Walton) ...	14
Pure Food Act, 1908: Report of Chief Food Inspector (Mr. Arthur Kench) ...	19
Report of the Chief Sanitary Inspector (Mr. E. A. Cresswick) ...	21
Private Hospitals Act: Report by Dr. F. M. Suekling ...	23
Medico-Legal Section: Hospital Admission Depôt, Report of the Government Medical Officer for Sydney (Dr. Arthur Palmer) ...	25

B.—Division of Maternal and Baby Welfare.

Report of the Director (Dr. E. Sydney Morris) ...	26
---	----

C.—Communicable Diseases.

Return of Diseases notifiable under the Public Health Acts for year ended 31st December, 1930 (with graphs) ...	35
Scarlet Fever, Lord Howe Island: Resume of data collected during outbreak in 1929–1930 ...	45
Measles amongst scarlet fever cases, Coast Hospital: Some notes on (Dr. F. H. H. Wilson) ...	46
Abnormal conditions of Public Health Interest (Dr. E. Sydney Morris)—	
(a) Endemic typhus fever (Brill's disease) ...	47
(b) Iodide rash simulating smallpox ...	51
Venereal Diseases Act, 1918: Report by the Commissioner (Dr. Robert Dick) for the year ended 31st December, 1930 ...	53

D.—Division of Tuberculosis.

Report of the Director (Dr. H. K. Denham) ...	59
---	----

E.—Industrial Hygiene.

Report of the Medical Officer for Industrial Hygiene (Dr. Charles Badham) ...	66
Studies in Industrial Hygiene (No. 16): Bakers' Dermatitis from activators containing persulphates	

A.—PUBLIC HEALTH ADMINISTRATION.

CHEMICAL LABORATORY.

REPORT OF THE ACTING GOVERNMENT ANALYST FOR THE YEAR ENDED
31st DECEMBER, 1930.*Staff.*

<i>Acting Government Analyst</i>	Sidney Gilbert Walton, F.A.C.I.
<i>Senior Assistant Government Analyst</i>	Harold B. Taylor, M.C., D.Sc., F.I.C., F.A.C.I.
<i>Assistant Government Analyst</i>	Arthur D. Dibley, A.S.T.C., A.A.C.I.
<i>Analysts</i>	Robert G. O'Brien, A.S.T.C., A.A.C.I. Ernest S. Ogg, B.Sc., A.A.C.I.

Four laboratory assistants; clerk (Grace McGlynn), 1 typist.

A total of 22,194 samples were examined in the Chemical Laboratory during the year 1930, representing an increase of over 1,500 on the number received for analysis in any previous year. Of this total, 19,705 samples were submitted for the purposes of the administration of the "Pure Food Act, 1908," and 2,489 samples for the public services of the State.

PURE FOOD ACT.

Milk.—By far the greater proportion of samples submitted under the Pure Food Act consisted of milks, 14,638 of which were collected in the metropolitan area, and 2,747 in country districts. The proportion of samples failing to conform to the standard during the period under review shows a definite increase in comparison with that of 1929, being 2·9 per cent. of the total analysed as against 2·2 per cent. The number of adulterated milks collected in the metropolitan area amounted to 351 (2·4 per cent.). This total included 129 samples deficient in milk-fat; 149 deficient in solids-not-fat; 69 deficient both in milk-fat and in solids-not-fat; 2 artificially coloured with annatto, 1 containing a considerable amount of dirt, and 1 prepared with skim milk powder. The samples taken in country districts included 42 deficient in milk-fat, 87 deficient in solids-not-fat, and 30 deficient both in milk-fat and in solids-not-fat, making a total of 159 adulterations, equivalent to 5·7 per cent. of the total collected.

Preservatives in Beer.—The samples taken under the Pure Food Act, excluding milk, numbered 2,320. This total includes samples of beer manufactured in this and two adjoining States, examination of which was undertaken particularly in regard to the presence of preservatives, in view of the desire of certain manufacturers to be permitted the continued use of salicylic acid. In only one instance was a preservative substance (benzoic acid) found, and it was within the amount permitted in the State of its manufacture.

Butter Substitutes.—Samples of "butter" submitted were found to contain large proportions of cocoanut fat. This was apparently part of a systematic attempt to evade the provisions of the regulations governing butter and margarine (butter substitutes). The standard for margarine requires that all preparations of edible oil or fat which are intended to be, or which may be used in place of butter, shall be marked "Margarine," and, also, to permit of easy identification, the standard requires that such preparations shall contain specified proportions of Queensland arrowroot or sesame oil. The butter-fat content, moreover, is limited to 10 per cent. When an article is prepared for use as butter, which is not marked "Margarine," and which does not contain the ingredients specified in the standard for margarine, it must be in conformity with the requirements of Regulation 27, *i.e.*, it must be butter. The samples under notice were not marked "Margarine," did not contain either Queensland arrowroot or sesame oil, and approximately 25 per cent. of butter was present as one of the constituents. The following is a representative analysis:—

Water	15·8 per cent.
Curd and salt	2·3 "
Fat	81·9 "

The values obtained from the fat were:—

Reichert-Wollny number	13·9
Polenske number	13·0
Kirschner number	6·5
Iodine number	9·5
Saponification number	251

From these results it was concluded that the sample was prepared chiefly with cocoanut fat, and contained approximately 25 per cent. of butter.

Citrus Fruit Juices.—The extraction of citrus fruit juices for the cordial trade is almost wholly done by mechanical means. There is, therefore, a tendency to include with the juice, rind, pith and segment partition walls in a finely divided state. For the purpose of prescribing the maximum amount of insoluble solids which should be allowed in citrus fruit products (beverages), analyses were undertaken, the results of which are given hereunder. The method used was that given in the "A.O.A.C. Methods of Analysis," 1925 edition, p. 210, for water-insoluble solids in fruit products, excepting that, before

weighing, the insoluble matter was separated from the hardened filter paper used, by washing it with a jet of hot water into a crystallising dish. After evaporation to dryness, the dish and contents were weighed and the weight of the dish subtracted. The following are the analyses of the samples examined in the Laboratory :—

Description of Sample.	Insoluble Solids.
	per cent.
Orange Juice (a good mechanically extracted juice)	1.0
Lemon Juice (" " " ")	0.6
Lemon Juice expressed in Laboratory. (1 doz. lemons of average quality were deprived of their skins, and as far as possible were freed from any adhering pith. They were then pulped, this pulp containing all the coarse segment partition walls and juice cells).	2.2
Lemon Juice expressed in Laboratory. (1 doz. lemons of similar quality to above were squeezed in an ordinary glass squeezer. This juice represents an ordinary lemon squash containing practically all the juice cells, but not the segment partition walls).	0.5

After consideration of the above figures, it was decided that, in order to prevent the addition of rind, pith and segment partition walls to citrus fruit juices, the following standards should be recommended :—

- Insoluble Solids in Orange Juice .. Not more than 1.5 per cent.
- Insoluble Solids in Lemon Juice .. Not more than 1.0 per cent.

Jam.—With a view to formulating a suitable standard for jam, samples differing in quality were examined, the following results being obtained:—

	Strawberry Conserve.	Strawberry Conserve.	Raspberry Jam.	Raspberry Jam.
	per cent.	per cent.	per cent.	per cent.
Moisture (loss at 100 deg. C.)	21.5	42.9	20.65	25.56
Total Solids	78.5	57.1	79.35	74.44
Insoluble Solids	1.0	1.6	3.13	3.18
Alcohol Precipitate (Pectin, &c.)	0.27	0.39	0.24	0.31
Total Acidity (as Citric Acid)	0.59	0.60	0.90	0.82
Malic Acid	0.1	0.1	0.1	0.1
Citrates (as Citric Acid)	0.72	1.07	1.09	1.27

The question of permitting the addition of various fruit derivatives to jam, with a view to improving manufacture without lowering the quality, was considered. Where the fruit used, through seasonal or other cause, is deficient in those natural qualities (acid, pectin, &c.) on which the flavour and appearance of the finished product depend, it appears reasonable to allow the addition of limited amounts of these substances in order to ensure the manufacture of a better and more uniform article. Moreover, recent investigation has shown that acid is necessary for the conversion of pectose into pectin. As, however, the indiscriminate use of acid and pectin might result in lessening the quantity of fruit used, it is necessary, if the use of these substances is to be sanctioned, to prescribe a minimum fruit content. After consideration of all the facts, it was recommended that the standard should provide for a fruit content of not less than 45 per cent. (by weight), and should permit the addition of up to 0.3 per cent. pectin (calculated as calcium pectate) and 0.5 per cent. of fruit acids.

Saponin—use in beverages.—During the year a sample of “ heading,” used for promoting froth on beverages, was received for analysis. This was found to be a solution of saponin, probably obtained from Quillaia bark. The saponins derived from this source are stated to contain toxic glucosides (quillaic acid and sapotoxin), and the presence of any glucoside must, in accordance with the requirements of Regulation 66 (1), be declared on the label.

Substances similar to this have been universally used for the production of froth on temperance and other drinks for a very long period. Although saponin has well-defined toxic properties, it is recognised that the mucous membrane of the digestive canal forms an almost complete protection to limited amounts of it, and, therefore, it is unlikely that harmful results would ensue from the quantities at present being used in beverages. If, however, its continued use is to be allowed, it is desirable that the maximum amount permissible should be specified.

Experiments as to the toxicity of the sample submitted were carried out as follow :—

A guinea pig weighing 472.5 grammes was drenched with 1 c.c. of the sample and was not affected after twenty-four hours. The same pig was then drenched with 5 c.c. It showed extreme distress at the expiration of one and three-quarter hours, and died within two hours. On examination the stomach showed a large patch of haemorrhage in the wall; congestion in the upper third of the intestines; slight congestion of the spleen and liver. The kidneys and suprarenals were normal. The stomach and part of the intestines were very considerably distended with froth, and the heart was very full. The immediate cause of death was apparently the pressure on the heart from the enormously distended stomach.

Saccharin in foods.—The substitution of saccharin for sugar has lately become increasingly noticeable. An examination of pickles made in 1929 disclosed the fact that practically all the locally-made articles contained this substance, manufacturers urging in its favour that the public demanded white, sweet pickles, which could only be supplied by the substitution of saccharin for sugar in manufacture. It was stated that when sugar is used, reaction with acetic acid causes discolouration and renders the article unattractive.

In 1930 it was found that saccharin was used by manufacturers in this State in the preparation of ice cream cones. The reason given for the substitution in this instance was that cones containing the requisite amount of sugar became soft on exposure, and in that condition proved unsatisfactory containers for ice cream.

A representative number of cordials was examined for the presence of saccharin, but in only two cases, both of which were of country manufacture, was saccharin found.

Spraying of fruit and vegetables.—Samples of fruit and vegetables were examined for evidence of the presence of products remaining from the use of spraying mixtures. Nineteen out of twenty samples of apples were examined and found to contain arsenic, in no case, however, in excessive amount, the proportions ranging from 1/800th to 1/100th grain per lb. Eight samples of celery contained lime and copper, probably derived from the use of Bordeaux mixture, but these constituents were not present in any considerable quantity. One sample of spinach contained lead arsenate, the arsenic present amounting to 1/15th grain per lb. Twenty-eight other samples of fruit and vegetables on examination gave no evidence of the presence of spraying mixtures.

On three occasions samples of vegetable marrow were submitted for examination as to the presence of poisons, but in each case the taste which gave rise to the complaint was found to be due to the presence of a bitter principle occasionally occurring naturally in this vegetable.

Bread Improver.—Four samples of yeast foods submitted were found to contain persulphates ranging up to 3 per cent. The use of this “improver” in flour is a recent innovation in this State, and was the cause of a severe outbreak of bakers’ dermatitis in employes handling these substances. Action has been taken as a consequence of which the use of persulphates as a constituent of yeast foods has been abandoned.

Particulars of Adulterations.—The total number of foods (other than milk) and drugs which were not of the substance, nature and quality demanded, amounted to 504. The following, briefly, are particulars of the adulterations:—

Beer.—1 sample was deteriorated and unfit for consumption.

Brine.—14 samples contained foreign matter and impurity, in contravention of the regulation which permits only clean, previously unused brine to be used for injection into meat.

Butter.—7 samples contained large proportions of foreign fat.

Cordials, Beverages.—2 samples of cordials contained saccharin; 2 samples of cordials contained excessive preservative.

Fruit Juices, &c.—7 samples of lemon juice were deficient in citric acid; 6 samples of aerated waters contained lead ranging from 5/100ths to 20/100ths grains per gallon (1 in addition containing 0.5 grain of copper per gallon).

1 sample of “Heading” was found to be a solution of Saponin.

Cream.—2 samples were deficient in fat.

Essence.—1 sample of terpeneless essence of lemon was prepared with mineral oil as the vehicle.

Hydrogen peroxide.—2 samples were deficient in available oxygen; 3 samples were deficient in available oxygen and gave a characteristic reaction for barium.

Ice Cream.—3 samples were deficient in fat.

Ice Cream Cones.—8 samples were prepared with saccharin.

Jam.—1 sample contained artificial flavouring matter and a proportion of dirt, the latter probably due to imperfect washing of the fruit.

Meat and Meat Products.—

166 samples of meat (50 per cent. of the total examined) were illegally preservatised.

33 samples of tripe (30 per cent. of the total examined) were illegally preservatised.

234 samples of sausages (16 per cent. of total examined) contained an excess of a permitted preservative.

2 samples of sausages contained excess starch.

Pudding.—1 sample of pudding was deteriorated and unfit for consumption.

Tomato Sauce.—1 sample contained excessive bacteria.

2 samples contained a farinaceous thickening substance.

Vegetables.—1 sample contained 1/15th grain of arsenic per lb., derived from the spraying mixture used (lead arsenate).

Vinegar.—1 sample contained 0.09 per cent. phenols, corresponding to 1 per cent. carbolic disinfectant.

Whisky.—1 sample contained added water in excess of the amount permitted.

Yeast Foods.—4 samples contained persulphates.

Table I gives details of the whole of the samples examined for the purposes of the Pure Food Act.

PUBLIC SERVICES OF THE STATE.

A total of 2,489 samples were examined in connection with the public services of the State, comprised as under:—

Institutions.—Subsidised institutions and hospitals submitted 328 samples, including milk for the control of dairy herds, foods for the control of supplies made under contract, human milk in connection with the activities of baby clinics, drugs for analysis as to quality, stomach contents and vomit in regard to the diagnosis of illness, &c.

Government Stores Department.—The Government Stores Department forwarded 827 samples. These were submitted for the purpose of formulating standards and specifications for supply, and for the control of the quality of the articles supplied under contract.

Pharmacy Board.—The Pharmacy Board submitted for analysis 61 samples for the purposes of the administration of the Poisons and Dangerous Drugs Acts.

Police Department.—The Police Department required the examination of 307 exhibits in connection with criminal investigations and prosecutions under the Dangerous Drugs Act. These included cases of assault, burglary, attempted poisoning, arson, abortion, stock poisoning, illegal destruction of protected animals, death by misadventure, selling liquor without a license, doping of racehorses, &c. Charges of being in possession of cocaine, morphine and opium, in contravention of the provisions of the Police Offences Amendment (Dangerous Drugs) Act, required the analysis of 75 exhibits of cocaine, 35 of opium, and 2 of morphine.

Toxicological.—Coroners forwarded human viscera and blood in connection with 85 uncertified deaths. Chemical examination gave negative results in 41 cases. In the remaining 44 cases, analysis showed death to be attributable to the following:—

Arsenic 5 cases	Morphine 1 cases
Carbon Monoxide 1 „	Nicotine 1 „
Chloral Hydrate 2 „	Veronal 2 „
Cyanide 5 „	Veronal and Morphine 1 „
Drowning 1 „	Strychnine 23 „
Hydrochloric Acid 1 „	—
Thorn Apple (<i>Datura Metel</i>), of which hyoscyamine is the active principle 1 „	44 „
	—

Industrial Hygiene.—Investigations in connection with industrial hygiene comprised 233 specimens, consisting of urine, faeces, hair, nails, paint, air, &c., for examination in connection with inquiries regarding conditions of employment, occupational diseases and claims under the Workers' Compensation Act.

Water and Sewage.—Municipal and Departmental authorities submitted a total of 337 waters, for examination in connection with the provision of water supplies to country towns, supervision of swimming pools, &c., and 87 effluents for the purpose of control of sewage installations and the discharge of drainage.

Miscellaneous.—Miscellaneous authorities forwarded 112 exhibits, embracing human viscera, animal viscera, urine, vomit, hashish (the subject of a Customs prosecution), medicines and pills, food and other exhibits re the presence of poisons, milk, and foods, petrol, &c.

Complete details of the samples examined will be found in Tables attached.

S. G. WALTON,
Acting Government Analyst.

TABLE I.—Samples examined during the year 1930 for the purposes of the administration of the Pure Food Act, 1908.

Nature of Sample.	Authority Submitting.	Samples.	
		Number Examined.	Number Adulterated or Falsely Described.
Beer	Food Inspectors	11	1
Bread	„ „	1	0
Brine	„ „	22	14
Butter	„ „	7	7
Chutney.....	„ „	1	0
Coffee	„ „	14	0
Confectionery	„ „	1	0
Cordials and Beverages	„ „	85	18
Cream	„ „	68	2
Dripping	„ „	3	0
Essence (Flavouring)	„ „	1	1
Fish (Tinned, Fresh, etc.) ...	„ „	9	0
Flour	„ „	11	1
Glycerine	„ „	1	0
Honey	„ „	4	0
Hydrogen Peroxide	„ „	12	5
Ice Cream	„ „	39	3
Ice Cream Cones	„ „	9	8
Iodine (Weak Tincture)	„ „	1	0
Jam	„ „	7	1
Lemon Butter	„ „	8	0
Meat—Fresh	„ „	332	166
Sausages—Fresh	„ „	1,441	234
Tripe	„ „	110	33
Cooked Meats	„ „	12	2
Medicines	„ „	4	0
Methylated Spirit	„ „	1	0
Milk (Fresh)	Food Inspectors, Metropolitan District	9,745	258
„ „	Municipal and Shire Inspectors, Metropolitan District.	4,893	93
„ „	Food Inspectors, Country Districts	1,078	90
„ „	Municipal and Shire Inspectors, Country Districts	1,669	69
Milk—Condensed	Food Inspectors	2	0
Olive Oil	„ „	11	0
Pectin	„ „	4	0
Pepper	„ „	5	0
Pills	„ „	1	0
Foods re Poisons	„ „	2	0
Preservatives	„ „	2	0
Pudding.....	„ „	1	1
Rennet and Rennet Tablets	„ „	2	0
Sago	„ „	1	0
Sauce	„ „	1	0
Soap	„ „	1	0
Spirits	Met. Dis. Lic. Ins.	4	0
„	Food Inspectors	2	1
Tomato Sauce	„ „	8	3
Vegetables and Fruit (re contamination with spray).	„ „	47	1
Wine	„ „	1	0
„ (Medicated).....	„ „	1	0
Yeast Foods	„ „	9	4
		19,705	1,016

TABLE II.—Samples examined during the Year 1930 in connection with the Public Services of the State.

Authority Submitting.	Nature of Sample.	Number of Samples.	Authority Submitting.	Nature of Sample.	Number of Samples.
Subsidised Institutions	Bread	16	Pharmacy Board— <i>ctd.</i> ...	Strychnine	1
“	Butter	1	“	Sulphuric acid	2
“	Bleaching powder	1	Police Department	Criminal investigations	412
“	Cream	2	“	Human viscera	85
“	Flour	2	“	Animal viscera	7
“	Infants food	1	Industrial Hygiene Authorities.	Air	19
“	Meats	74	“	Dust	2
“	Milk	178	“	Faeces	1
“	Human milk	35	“	Hair (Human)	26
“	Oatmeal	2	“	Kalsomine	2
“	Rice	3	“	Nails (Human)	12
“	Sago	5	“	Paint	7
“	Soup	1	“	Urine	162
“	Stomach contents (Lavage).	4	“	Yeast food	1
“	Vomit	2	“	Wood preserving oil	1
“	Whisky	1	Municipal and Other Authorities.	Waters	337
Government Stores Dept.	Caustic soda	1	“	Sewages	87
“	Chicory	75	Miscellaneous Authorities	Alum	1
“	Disinfectants	120	“	Bread	1
“	Honey	3	“	Celery	1
“	Ink powders and Writing inks.	75	“	Coffee beans	2
“	Insecticides	3	“	Confectionery.....	1
“	Lubricants	212	“	Corks	3
“	Luminal	2	“	Disinfectants	3
“	Malt and Cod Liver Oil Extract.	4	“	Fish	3
“	Meat	1	“	Hair (for Mattress Making).	6
“	Motor spirit	9	“	Hashish	1
“	Paint	5	“	Kapok	2
“	Paste (Adhesive)	9	“	Leather	1
“	Polish (Floor).....	5	“	Lemon juice	1
“	Roofing (Bituminous) ...	6	“	Medicines	11
“	Soap	241	“	Milk	5
“	Soda ash	1	“	“ (Condensed)	5
“	Spoons	2	“	Orange juice	2
“	Starch	1	“	Petrol	1
“	Tallow	1	“	Pills	3
“	Waterproof cloth	38	“	Various exhibits re poisons.	12
“	Wine	13	“	Soap	2
Pharmacy Board	Bismuth Carbonate	1	“	Soda ash	1
“	Chlorodyne	2	“	Raspberry syrups	6
“	Cocaine	1	“	Soil	14
“	Cough medicines	8	“	Plaster, sand, etc.	7
“	Disinfectants	11	“	Urine	1
“	Easton’s liquor	1	“	Vomit	1
“	Lead arsenate	1	“	Wheatmeal	1
“	Lysol	10	“	Medicated wines	5
“	Morphine	7	“	Animal viscera	6
“	Muriatic acid	10	“	Human viscera	3
“	Percain	1			
“	Pills	4			
“	Silverit	1			
					2,489

PURE FOOD ACT, 1908.

REPORT OF THE CHIEF INSPECTOR ON THE GENERAL ADMINISTRATION OF THE PURE FOOD ACT, 1908, FOR THE YEAR ENDED 31ST DECEMBER, 1930.

Staff.

Chief Inspector: ARTHUR KENCH; Senior Inspector: CHARLES V. FRANCIS; 10 Metropolitan inspectors, 2 country inspectors, and 1 assistant.

The executive work under the Pure Food Act includes the supervision of all places where food or drugs are prepared, stored or exposed for sale. Particular attention is given to the supervision of the milk supply; to the manufacture of jams, and fruit and vegetable preserving; condiments, smallgoods, and cordials; and to the general condition of grocery, fruit, vegetable, fish, and meat shops, both wholesale and retail.

Bread Supply.—Special inspectorial work has been carried out in connection with the preparation and delivery of bread and pastry, and many bakeries have been remodelled and repairs effected under the supervision of departmental officers.

Milk Supply.—In connection with the supervision exercised over the milk supply, 10,439 samples were procured by departmental officers and submitted to the Government Analyst for analysis. Prosecutions successfully undertaken against traders who were defrauding the public by supplying adulterated milk numbered 188, and the fines and costs recovered in connection therewith totalled £754 18s. In addition 25 samples of milk were procured and submitted to the Microbiological Laboratory for examination for tubercle bacilli and estimation of the bacterial content. Two hundred special inspections were made of wholesale milk distributing depots.

Cream.—65 samples were procured.

Meat—Use of Preservative Dusting Powders.—The question of preservation of meat has been thoroughly investigated; 1,912 samples of meat, including sausages, were obtained and submitted to the Government Analyst for analysis; in 244 cases it was found that traders had been dusting the surface of the meat with preservative powder. Prosecutions were undertaken in every case, and resulted in fines and costs amounting to £793 7s. being imposed.

Other Foods and Drugs.—A total of 2,326 samples of foods and drugs was submitted for analysis, and 249 traders were prosecuted. The fines and costs amounted to £807 7s.

Premises used for Preparation, Sale and Storage of Food.—Inspections were made of 12,181 premises used for or in connection with the preparation, sale, or storage of food. Prosecutions undertaken for unclean premises, etc., numbered 149; the fines inflicted totalled £773 11s. 6d. In addition, over 744 notices were served on traders requiring structural alterations to premises.

Seizure and Condemnation of Unsound Food.—During the year regular supervision has been exercised over food products in wholesale and retail stores, auction rooms and elsewhere. Over 91 tons of foodstuffs and 46,017 packages of assorted foods were found to be in so damaged or deteriorated a condition as to be unfit for food, and were seized and destroyed; 6 prosecutions were instituted and resulted in fines and costs amounting to £22 8s. The seizures included about 499 pieces of damaged crockery in use in restaurants, etc.

Venereal Diseases Act.—At the request of the Commissioner administering this Act special investigations were made concerning breaches of the Act; 5 prosecutions were undertaken and resulted in collection of fines and costs amounting to £20.

Tables are appended showing the nature of the samples taken during the year and the class of food seized and destroyed. A detail statement of the foods and drugs submitted for examination will be found in Table I of the Acting Government Analyst's report (p. 17).

ARTHUR KENCH,
Chief Food Inspector.

TABLE I.—Summary of Work performed by Pure Food Officers for the year ended 31st December, 1930.

Analysis of Samples of Milk.	1929.			1930.		
	Samples taken by—			Samples taken by—		
	Departmental Officers.	Municipal and Shire Council Inspectors.	Total.	Departmental Officers.	Municipal and Shire Council Inspectors.	Total.
Number of samples taken from all parts of the State	7,993	6,319	14,312	10,439	6,829	17,268
Number of samples below standard ...	214	110	320	320	144	464
Number of warnings	81	33	114	132	66	198
Number of prosecutions	133	77	210	188	78	266
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Amount of fines and costs.....	572 8 0	303 6 6	875 14 6	754 18 0	309 16 0	1,064 14 0

Foods and Drugs, other than Milk.* (See Table I, p. 19.)

	1929.	1930.
Number of samples taken from all parts of the State	2,576	2,326
Number of samples below standard	518	259
Number of warnings	45	10
Number of prosecutions	473	249
Amount of fines and costs	£2,317 1s.	£807

* Local authorities (municipal and shire councils) do not, as a matter of routine, collect samples of foods and drugs other than milk.

Food unfit for Consumption, Seized and Destroyed.

The seizures comprised over 91 tons of foodstuffs, and 46,017 packages of assorted foods.

	1929.	1930.
Number of prosecutions	9	6
Amount of fines and costs	£49 12s.	£22 8s.

Inspection of Premises used for Preparation, Sale, or Storage of Food.

	1929.	1930.
Number of premises inspected in all parts of the State	11,564	12,181
Number of notices issued	712	744
Number of prosecutions	221	149
Amount of fines and costs	£1,321	£77

TABLE 2--Summary of Legal Proceedings for Breaches of the Pure Food Act and Regulations, 1929 and 1930.

	1929.			1930.		
	Prosecutions.	Fines and Costs.		Prosecutions.	Fines and Costs.	
		£	s. d.		£	s. d.
Adulterated milk	210	875	14 6	188	754	18 0
Adulterated foods and drugs	473	2,317	1 0	249	807	7 0
Food unfit for human consumption seized and destroyed	9	49	12 0	6	22	8 0
Unclean premises	221	1,321	4 4	149	773	11 6
General breaches of Act and Regulations*	74	272	7 0	60	167	9 0
Breaches of Venereal Diseases Act and Regulations	9	70	16 0	5	20	0 0
Grand Total	996	£4,903	14 10	657	£2,545	13 6

* Uncleanly habits in preparation, handling, delivery, or storage of food; use of dirty or unsuitable utensils, etc.

TABLE 3.—Summary of work carried out under the Pure Food Act, 1908, from the date of its operation (October, 1910) to 31st December, 1930.

	Total No.	Total below standard.	Prosecutions undertaken.	Amount of Fines and Costs.
				£
No. of milk samples	131,804	7,106	3,590	18,667
No. of food and drug samples	20,645	3,997	2,357	8,295
Premises inspected	154,782	.....	2,225	11,407
General breaches of Act	1,836	.....	1,465	5,086
Total samples collected	309,037	11,103	9,637	43,455

REPORT OF THE CHIEF SANITARY INSPECTOR FOR THE YEAR ENDED 31st DECEMBER, 1930.

Staff.—Chief Sanitary Inspector, E. A. CRESSWICK, M.R.S.Ist.; 9 certificated inspectors, and 1 certificated inspector and licensed surveyor.

ROUTINE AND GENERAL.

Inspection of Country Towns.—Primary inspection has been made of 59 country towns and villages and reports forwarded to local authorities indicating necessary improvements.

Reinspection of Country Towns.—With the object of ascertaining the action taken by local authorities to give effect to previous recommendations by the department, reinspections of 78 towns and villages were made. 12 outbreaks of infectious diseases in different parts of the State were investigated and full reports submitted thereon.

Notice was served on one local authority under Section 3 of the Public Health (Amendment) Act, 1915, in regard to installation of a garbage service.

Sanitary and Garbage Depot Sites.—During the year 237 sanitary and garbage depot sites were inspected and 9 proposed new sites were investigated and reported upon. Two of the proposed sites were reported unsuitable and approval refused.

Insanitary Buildings.—Inspections were made of 142 insanitary buildings, and in 79 cases where the structures were unfit for human habitation or occupation closing order certificates were issued to local authorities, who were recommended to close the buildings. In other instances necessary improvements were recommended.

General Inspections and Investigations.—These included 168 examinations of septic tanks and sites for tanks, and 204 plans of tanks submitted for approval; investigation of 6 complaints of drainage and other nuisances; and 4 inspections and enquiries into possible pollution of water supplies. Inspections were made of 115 aborigines and other camp sites; 578 noxious trade premises; 179 slaughtering premises; 9 piggeries; 37 food premises (including butchers' shops); 25 public hospitals; 26 private hospitals; 34 public and private schools; 28 bedding factories; 5 cemeteries; 10 swimming baths; 12 wharves, jetties and ferries; 3 show-grounds and racecourses; and 224 hotels. One new chemical closet was tested over a period and found unsatisfactory.

Supervision of Abattoirs and Meat Works Wastes.—42 inspections were made of both the State Abattoirs and the Sydney Meat Preserving Company's Works. Haslam's Creek has also been kept under observation for probable nuisance. Very few complaints were made regarding the above-mentioned works.

Samples.—5 samples of water from water supply wells, and 8 samples of hair from bedding factories were collected and submitted for examination.

Routine Destruction of Rats.—Systematic destruction of rats by means of traps and poison has been carried out by the departmental rat catchers along the harbour front at Woolloomooloo Bay, Circular Quay and Blackwattle Bay. 4,097 rats caught by the departmental, Sydney Harbour Trust and City Council ratecatchers, were examined in the Microbiological Laboratory and found free from plague.

Land Notified as Unfit for Building Purposes.—Considerable additional survey work has been effected and bench marks established in relation to notified areas. Surveys have been made during the year of estates comprising considerable low-lying areas which have been subdivided for building purposes in the Erina Shire, also of an area round the shores of Kogarah Bay, comprising more than 100 acres. Plans have been prepared of these areas, but they have not yet been finally dealt with.

Large areas of swampy lands adjoining Sheas Creek in the Municipality of St. Peters, Narrabeen Lake in Warringah Shire, and at Rose Bay in the Municipality of Woollahra, have been raised by sand pumps to the required height and rendered suitable for building purposes. In connection with this matter extensive systems of drainage have also been considered and approved or modified. An area of about 61 acres at Cook's River has also come under review, and has been released from further restrictions, and is about to be subdivided. Eight additional notices covering 140 lots have been issued. These have been entered in the Register of Causes, Writs and Orders. One notice has been revoked.

Routine inspections were made during the year and numerous lots were brought to a condition which rendered them suitable for building purposes. This involved the writing of 143 reports. Replies to 1,570 solicitors' enquiries as to whether or not certain land is notified under Section 55 have been furnished; these at 2s. 6d. each returned a revenue of £196 5s.

Theatres and Public Halls.—120 inspections have been made of theatres and public halls within the Metropolitan area and country districts and air tests were carried out at all premises.

Punting of Garbage to Sea and Pollution of Beaches.—Extensive enquiries were made into the matter of punting of garbage to sea for disposal purposes and as to the pollution of the beaches resulting therefrom. The Harbour Trust has amended its regulations to enforce cleanliness of the punts, covering the garbage in the punts and the disposal of garbage at sea at a distance of at least three miles from the shore.

Pollution of Murray River.—A special investigation was made into the possible pollution of the Murray River from various sources, which necessitated visits being paid to 22 towns and villages on the New South Wales side of the river. This work was carried out in conjunction with the Victorian Health Authorities, who made similar inspections on that side of the river.

Prosecutions.—Prosecutions were instituted by officers of this Branch for various breaches of the Health Acts and Regulations, and fines and costs amounting to £148 9s. 10d. were imposed.

Post Hole Borer Closet.—This is an arrangement by which a simple and inexpensive form of cesspit closet may be provided for use at temporary works camps, etc., and thus dispense with the more expensive closet arrangement.

This type of closet has been used fairly extensively in Fiji and other Eastern lands.

The bore hole closet consists of a circular hole 16 inches in diameter, bored to a depth of 16 feet or 20 feet where possible, according to the nature of the soil. Suitable portable closet structures are erected over the hole. The closets can be quickly and cheaply installed in suitable soil. This type of closet possesses several advantages compared with the ordinary cesspit, and would, in some cases at least, serve the purpose better than the pan closet system where the contents are disposed of by the occupiers of premises. The possibility of the pollution of underground water supplies needs to be kept in view, when locating the position of the bore hole closet.

A trial is now being made with this type of closet at Liverpool Hospital and Home. Six holes nine inches in diameter and ten to twelve feet deep have been put down by a borer of reduced size. The soil is of a loose loamy nature and suitable for the purpose. The six holes were bored by two men in half a day. A temporary closet structure is provided and a moveable box cabinet seat is placed over the hole in use.

The conveniences are being used by six men. Each hole has lasted for about three months. The closets when recently inspected were fairly free from offensive odours and flies.

Revision of Ordinances.—Proposed amendments to ordinances relating to collection and disposal of nightsoil, garbage, swimming baths, camping areas, etc., have been drafted and are now under consideration.

HOOKEWORM CAMPAIGN.

The hookworm survey in 1930 was recommenced on 5th February, 1930, after the school vacation, by a medical officer from the Education Department and a sanitary inspector from the Health Department in conjunction with the Commonwealth Laboratory at Lismore. The survey was continued until the beginning of the school holidays in December.

237 schools were visited and the children instructed in hookworm disease and sanitation, with the object of disseminating useful information and encouraging better conditions.

The response by school children in supplying specimens is now much more satisfactory than when the campaign first began, and with the exception of a few schools, only one visit was necessary to bring about the supply of the specimens desired.

Specimens examined in 1930 numbered 8,673, of which 8,369 were from Europeans and 304 from aborigines. Of the specimens received from Europeans 124 (1·53 per cent.) were found to be infected, and of the 304 from the aborigines 148 or 48·6 per cent.

Six official aboriginal reserves were visited, and, with the exception of one, the closet accommodation was considered satisfactory.

Eight unofficial aboriginal camps were visited. Closets were provided at three camps only, and in each case the closet was constructed in a very crude manner.

The aborigines at unofficial camps rarely use the closets, the majority adhering to their primitive habits.

Specimens in satisfactory numbers were received from all official aboriginal reserves. In the case of infected aborigines, all specimens received after treatment proved negative.

Considerable difficulty was experienced in obtaining specimens from aborigines not residing on official reserves, and also in administering treatment to them, owing to their migratory habits. Aborigines defecating about the camps are likely to continue to spread infection and reinfect treated cases.

The survey included inspection of 237 schools, 229 dwellings and 15 sanitary depots. Recommendations in respect of any defects found were made to the Education Department and to Local Government bodies.

As the result of previous investigations scavenging services have been installed or extended in three shires. Considerable improvement was noticed in the closet accommodation in proclaimed scavenging areas, but outside such areas numerous insanitary conditions were found to exist.

SCARLET FEVER AT LORD HOWE ISLAND.

An officer of this branch was detailed to visit Lord Howe Island in connection with the occurrence of scarlet fever there in the summer of 1929–1930. A résumé of data collected during the visit will be found in the Infectious Diseases section (p. 45).

PRIVATE HOSPITALS ACT, 1908.

Report on the operation of the Act for the year ended 31st December, 1930, by F. M. SUCKLING, M.B., Ch.M., D.P.H. (Sydney), D.T.M. & H. (Cambridge), Assistant Medical Officer of Health.

At the close of the year there were 654 licensed hospitals in the State, showing a decrease of 5 compared with the total for the year ended 1929.

Of these 654 hospitals, 277 are included in Sydney and District (a decrease for the year of 8), the remainder 377 (increase for the year of 3) being situated in the country districts.

Inspection of Private Hospitals.—The whole of the State has now been covered by the Supervisory Nurses in their inspections of private hospitals.

The Metropolitan Area has been divided into three districts, each under the supervision of a nurse and the work of re-inspection continues daily. The rest of the State has been divided into four areas, each of which is similarly under the supervision of a nurse. These four nurses not only have completed their primary inspections of country hospitals, but are now engaged in re-visiting many localities.

Primary inspections revealed defects such as were indicated in former reports, viz., the neglect of resident managers to keep their registers fully entered up to date and the making of alterations in arrangement of rooms without first seeking the approval of the Board of Health.

Re-inspections disclosed that the work of the supervisory nurses was having the desired effect in that defects which had been pointed out previously had been remedied in most instances, and that the management of hospitals generally was becoming more efficient.

Community activities in connection with Private Hospitals.—In addition to the Kuring-gai Community Service Hospital at Chatswood, the Bush Nursing Association and the Country Women's Association still carry on the excellent work of maintaining private hospitals for the benefit of dwellers in the remoter parts of the State.

The Department has also been approached several times during the year by secretaries of local community efforts in some of the smaller country towns with a view of establishing private hospitals pending such time as the larger question of erecting a suitable public district hospital can be entertained.

At the close of the year the Bush Nursing Association was responsible for licensed hospitals at Bonalbo, Dalgety, Ebor, Erigolia, Finley, Ivanhoe, Jindabyne, Kentucky, Nimmitabel, Pilliga, Reid's Flat, Tabulam, Tumbarumba and Urbenville.

Two exempted hospitals are also under the control of this association, viz., those at Mt. Hope and Rye Park.

The Country Women's Association has provided for hospitals at Engowra, Gulargambone, Hillston, Quandialla, Tallimba, Tottenham, Ungarie and Yenda.

The Hay Maternity Hospital is under the control of the Red Cross Society.

The Soldiers' Memorial Hospital at Stockinbingal, which originally was the result of a local community effort, ceased to be a licensed private hospital during the year.

Exemptions.—Two hospitals were exempted for the year, viz., at Mt. Hope and Rye Park under the auspices of the Bush Nursing Association as indicated above.

Effect of the Public Hospitals Act, 1929, on the operation of the Private Hospitals Act.—As noted in my report for the year 1929, several premises hitherto licensed as private hospitals were placed in the Third Schedule of the Public Hospitals Act, 1929, and accordingly no renewals of licenses under the Private Hospitals Act were further requested in the case of such institutions.

As, however, some ambiguity seemed to exist as to the exact legal position of some of these hospitals in view of a minute of the Chairman of the Hospital Commission, I submitted a report and requested that the opinion of the Crown Solicitor might be sought thereon. The Crown Solicitor replied as follows :—

“ Upon consideration of this matter I advise as follows :—(a) The licensed private hospitals now placed in the third schedule to the Public Hospitals Act, 1929, or subsequently so gazetted automatically cease to be premises requiring a license under the Private Hospitals Act, 1908.

“ (b) I think that the contention advanced by the Chairman of the Hospitals Commission is valid and that there is no necessity for the issue of further licenses under the Private Hospitals Act, 1908, in respect of the private hospital section of the institutions mentioned in the Third Schedule to the Public Hospitals Act, 1929, and that such minute is therefore valid with reference to the Private Hospitals attached to Lewisham, Mater Misericordiae and St. Vincent Hospital, Darlinghurst.

SECTIONS 8 (1) AND 15.

During the year a proposal to erect a private hospital in Macquarie-street, Sydney, was under the consideration of the department. The proposal presented certain unusual features which had not hitherto come under notice in connection with the construction of any former private hospitals licensed in the State.

The question became one of whether under the Act *a part* of any building could be used as a private hospital. Accordingly the matter was submitted to the Crown Solicitor for an opinion, who reported as follows :—

“ It is proposed to erect a building in Macquarie-street, Sydney, to be used for professional offices and private hospital, the hospital to occupy the 10th, 11th, 12th and 13th storeys and the roof.

“ I am asked to advise whether the Board of Health has power under the Private Hospitals Act, 1908, to recommend the licensing of part only of a building.

“ It is obvious that, in considering an application for a license of part only of a structure, the Board cannot restrict its consideration to that part only, but must have regard to the remainder of the structure, as the questions of safety, convenience, sanitation, &c., would be materially affected.

“ I do not think that the Act contemplates part of a house or building being licensed.”

Sepsis connected with pregnancy in Private Hospitals.—Sixty-four (64) cases were notified during the year, thirty-two (32) from metropolitan hospitals and thirty-four (34) from country hospitals. Forty-two (42) of these were single cases each from a different hospital, the remaining 22 being distributed as follows :—Annandale, one hospital notified two cases at different intervals during the year; Arncliffe, one hospital two cases similarly; Earlwood, one hospital two cases at different intervals; North Sydney, three cases were notified from one hospital at different periods; Waverley, three cases from one hospital similarly; Berrigan, two cases from one hospital during the year, the licensee subsequently relinquishing her hospital; Goulburn, one hospital notified three cases at different times; Mudgee, one hospital notified three cases at different periods; and Orange, one hospital notified two cases in one month but there appeared to be no causal connection between them.

The manifestation of sepsis as exhibited in these notified cases included such conditions as pyelitis, femoral thrombosis, pelvic cellulitis, peritonitis, sapraemia, septicaemia and septic miscarriages.

It is noted that the number of notifications for 1930 shows a decided increase on that for 1929, which was twenty (20). Such increase was to be anticipated, as I pointed out in former reports, owing to the proclamation as notifiable diseases, of “ puerperal pyrexia ” by nurses under the Nurses’ Registration Act, and “ puerperal infection ” under the Public Health Act by medical practitioners. The observance of notification of these diseases by the respective parties concerned appears to have been satisfactory during the year, so that the extent to which “ sepsis in pregnancy ” existed in private hospitals during the year may be deemed to be fairly accurate as revealed by the number of notifications received.

TABLE I.—Showing the Classification of Private Hospitals licensed at 31st December, 1930, according to Nature of Cases received and the total Number of Beds provided by each class of hospital.

	Medical, Surgical and Lying-in.		Medical and Surgical only.		Lying-in.		Total.	
	No. of hospitals.	No. of beds.	No. of hospitals.	No. of beds.	No. of hospitals.	No. of beds.	No. of hospitals.	No. of beds.
Sydney and District	91	1,796	21	302	165	669	277	2,767
Country Districts	169	1,568	14	188	194	825	377	2,581
Total.....	260	3,364	35	490	359	1,494	654	5,348

(a) Hospitals licensed for lying-in cases constitute the greatest proportion of those licensed, being 54·8 per cent. of the total, which is slightly less than that of the previous year.

(b) There has been also a small decrease in hospitals licensed for medical and surgical cases only, with a corresponding increase in those licensed to receive all classes of cases.

TABLE II.—Showing Classification of Private Hospitals with respect to size as signified by the Number of Beds available.

	1	2	3	4-5	6-10	11-20	Over 20.	Total.
Sydney and District	22	30	33	49	59	53	31	277
Country Districts	20	34	51	78	127	57	10	377
Total	42	64	84	127	186	110	41	654

The number of hospitals containing 4-10 beds continues to comprise the largest proportion of those licensed, being 47 per cent. of the total, a figure similar to that of the previous year.

In the great majority of private hospitals the licensees and approved resident managers are the same persons, the exceptions being 53 (Sydney district, 11; country, 42). Nine medical practitioners held the position of approved resident managers (Sydney district, 1; country, 8).

HOSPITAL ADMISSION DEPOT; MEDICO-LEGAL SECTION, &c.

REPORT OF THE GOVERNMENT MEDICAL OFFICER FOR SYDNEY FOR THE YEAR ENDED 31ST DECEMBER, 1930.

Medical Staff.

DR. ARTHUR PALMER, Government Medical Officer for Sydney; Dr. C. E. Percy, Medical Officer.

Depot Assistants, 2.

MEDICAL WORK.

Admissions to Hospitals and Home.—During the year ending 31st December, 1930, 10,545 persons were admitted through the Depot to the various Metropolitan hospitals. 6,152 were admitted to the State Hospitals and Homes at Lidcombe, Liverpool, Newington, George Street and Macquarie Street, Parramatta. 873 were admitted to the Convalescent Homes at Eastwood, Camden and Vacluse. 6,670 persons were referred to the Metropolitan hospitals and the Dental Hospital for outdoor treatment.

Another activity of the Hospital Admission Depot is the determination of the need of applicants for spectacles, artificial limbs, and other surgical appliances.

Medical Examination for Various State Government Departments.—These examinations totalled 205.

Medical Examination of Police Recruits.—Applicants for admission to the Police Force are examined at the Hospital Admission Depot. 728 such examinations were made during the year. Of these, 191 were classed as fit. Some of those rejected were subsequently reexamined and accepted when their defects were remedied, or when they reached the required physical standards.

When the recruits are delayed in being called into the Police Depot for their period of training, they are again examined.

On completion of twelve months' service all probationary constables are again examined at the Police Headquarters. 256 such examinations were performed during the year.

Medical Supervision of Sick Police.—This is carried out daily by the Government Medical Officer at the Police Headquarters. The sick or injured members of the Force attend for treatment or for the purpose of reporting the progress of their illness. The average daily number of police on sick report for 1930 was 51.08.

MEDICO-LEGAL WORK.

Examination of Alleged Rape and Criminal Assault Cases and Examination of Criminal Persons.—These cases are examined at all hours, as it is sometimes desirable that they be examined as soon as possible after the offence. Examinations are made to determine any injury or to ascertain the mental condition of these persons.

In addition, exhibits connected with these cases or with poisoning cases, etc., are seen before being sent to the Microbiological or Chemical Laboratories.

This work entails the attendance of the medical officers at the law courts in the city and suburbs, and at the Central Criminal Court and the Quarter Sessions, for the purpose of giving evidence.

57 such examinations were made during the year.

Coroner's Court.—The Government Medical Officer attends at the Morgue daily for the purpose of examining dead bodies in connection with suicides, murders, violent and uncertified deaths. He also gives evidence at the Coroner's Court in connection therewith.

During 1930, 172 external examinations and 201 internal examinations were performed.

Lunacy Work.—The Reception House at Darlinghurst is visited daily by one of the medical officers for the purpose of examining persons detained there. In conjunction with a second visiting medical officer 1,159 persons were certified as insane during the year.

In addition, arrangements were made for the transfer of suitable cases to State Hospitals and Homes.

Vaccination against Smallpox.—Members of the Police Force are vaccinated at the Police Depot during their course of training, and members of the general public are dealt with at the Hospital Admission Depot. 266 vaccinations were performed during the year.

The medical officers attached to this Branch are available for duty at all hours as they are liable to be called upon at any time by the Police Department for urgent work of a medico-legal nature.

SECTION I.—B.

DIVISION OF MATERNAL AND BABY WELFARE.

ANNUAL REPORT FOR 1930.

Director: Dr. E. Sydney Morris; Assistant to the Director, Dr. Elma Sandford-Morgan.

PART 1.—MATERNAL WELFARE.

The figures in this report have been collected in the first place by the Government Statistician's department, and where there is any possibility of the death of a woman during the child-bearing period being due to puerperal causes, complete investigation has been made by a medical officer of this Division before the statistics are finalised. In this way extreme accuracy is achieved, and there is no possibility of deaths which have a puerperal relationship failing to be classified as puerperal deaths.

Graph I shows the death-rate of women from childbirth and puerperal septicæmia, in New South Wales, per 1,000 births.

This death-rate is far higher than it should be, especially in a country such as this, where the general death-rate continues to decline steadily. Taken as a whole the maternal mortality rate is also declining, but much more slowly and more irregularly.

This year, 1930, is, unfortunately marked by one of the periodic rises in the maternal mortality rate—all the more noticeable and disappointing after the fall in 1929. In 1930 the live-births in New South Wales numbered 52,136 and the maternal deaths (excluding illegal operations, so as to bring our figures in line with those quoted for other countries) 260. The maternal mortality rate per 1,000 was thus 4.99.

TABLE I.

Year.	Total Births.	Total Puerperal Deaths.	Deaths from Illegal Operations.	Percentage of Total Deaths caused by Illegal Operations.	Maternal Mortality Rate, excluding Illegal Operations.	Ratio.*
1906	40,048	277	17	6.1	6.4	100
1907	42,195	263	7	2.6	6.0	
1908	42,525	304	15	4.9	6.7	
1909	43,769	252	8	3.1	5.5	
1910	45,533	261	8	3.0	5.5	
1911	47,677	279	12	4.3	5.6	91
1912	51,993	305	16	5.2	5.5	
1913	52,134	329	10	3.0	6.1	
1914	53,615	296	9	3.0	5.3	
1915	52,885	272	8	3.0	4.9	
1916	52,575	297	16	5.3	5.3	88
1917	52,467	327	22	6.7	5.8	
1918	50,700	267	15	5.6	4.9	
1919	48,528	263	17	6.4	5.0	
1920	53,974	331	27	8.1	5.6	
1921	54,634	281	33	11.7	4.5	78
1922	55,214	279	32	11.4	4.4	
1923	54,112	283	33	11.6	4.6	
1924	53,670	291	32	11.0	4.8	
1925	54,615	325	40	12.3	5.2	
1926	53,126	276	40	14.5	4.4	82
1927	53,858	352	46	13.0	5.6	
1928	54,800	327	32	9.7	5.4	
1929	52,676	278	33	11.8	4.6	
1930	52,136	301	44	14.4	4.9	

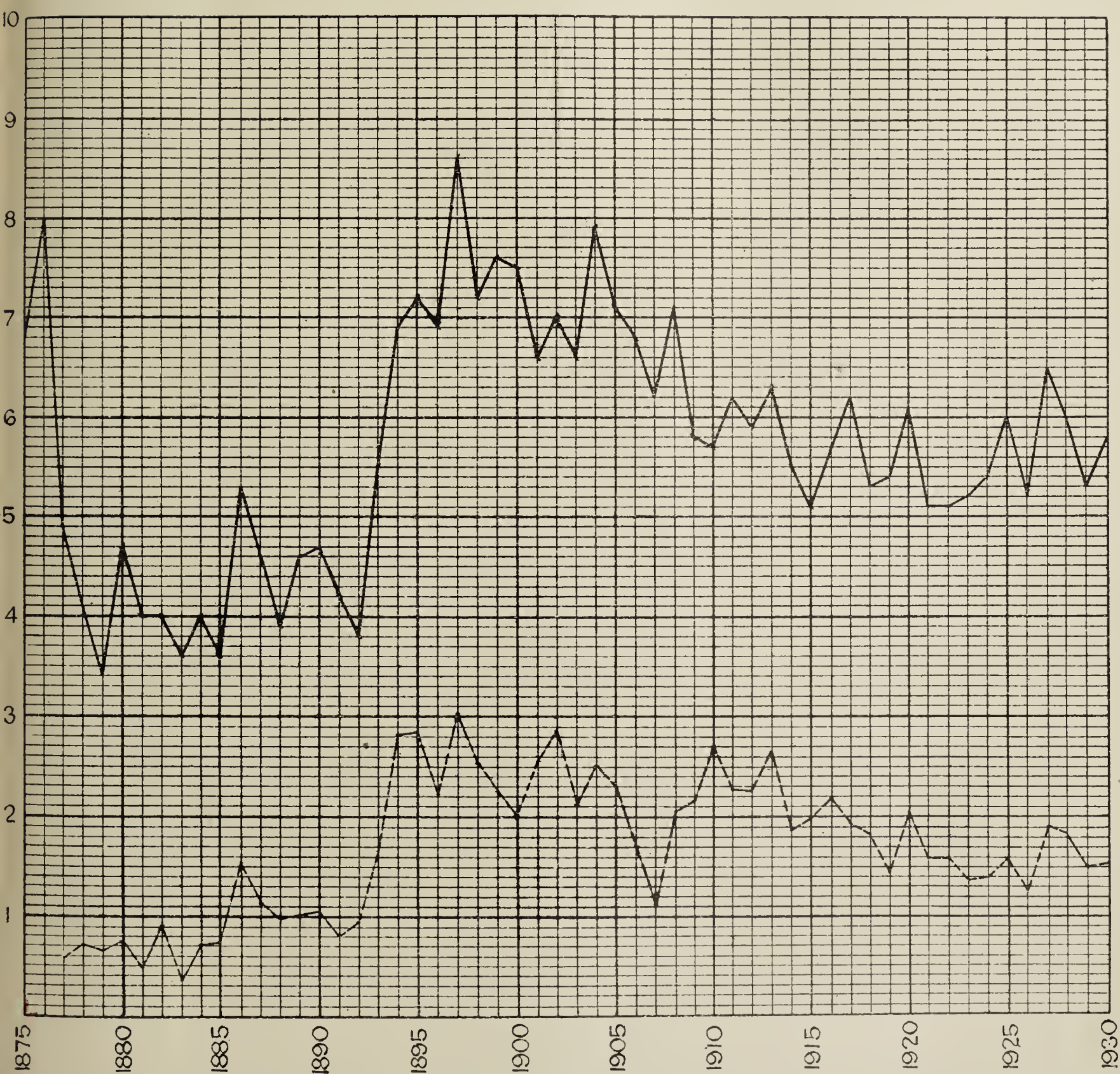
* Per cent. ratio of quinquennial averages to average of 1906-10 which is taken as 100.

In Table II these deaths from the various causes incidental to childbirth are shown as follows:—

NEW SOUTH WALES.—Deaths Incidental to Childbirth, 1928-1930.

Causes.	1928.		1929.		1930.	
	Number.	Rate per 1,000 Births.	Number.	Rate per 1,000 Births.	Number.	Rate per 1,000 Births.
Accidents of Pregnancy	32	.58	29	.55	33	.63
Puerperal Hæmorrhage.....	49	.90	34	.65	36	.69
Puerperal Septicæmia	63	1.15	49	.93	42	.81
" " following Abortion, Miscarriage	39	.71	30	.57	38	.73
Albuminuria and Eclampsia	67	1.22	48	.91	41	.79
Phlegmasia Alba Dolens, Puerperal Embolism, Sudden Death	25	.46	26	.49	24	.46
Other Casualties of Childbirth	20	.37	29	.55	46	.88
Total	295	5.39	245	4.65	260	4.99
Illegal Operations	32	.58	33	.63	44	.84
Grand total	327	5.97	278	5.28	304	5.83

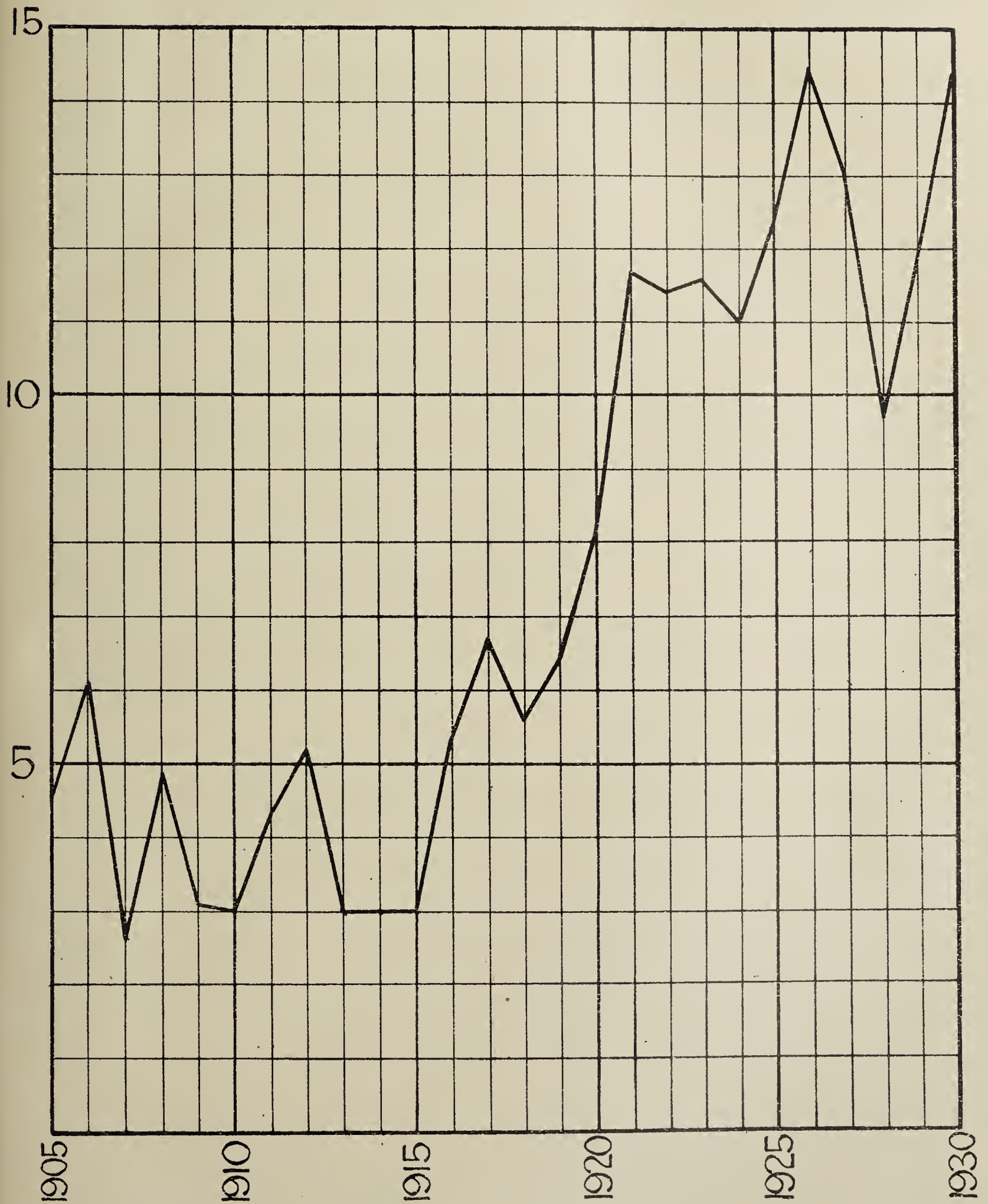
GRAPH No. 1.
 CHILDBIRTH AND PUERPERAL SEPTICÆMIA,
 ANNUAL DEATH RATE OF WOMEN per 1,000 BIRTHS
 IN
 NEW SOUTH WALES,
 1875-1930.



GRAPH No. 2.

MATERNAL MORTALITY.
DEATHS FROM ILLEGAL OPERATIONS,
N. S. W., 1905-1930.

• Note:— Since 1905 deaths from “illegal operations” are included in total deaths in childbirth.



As shown in the above table (1), the rise in this death-rate is also to be seen in the percentage ratio of quinquennial average for the period 1926-1930 to the average of 1906-1910, which is taken as 100—that for the last quinquennial period being 82, as against 78 for the preceding period (1921-1925).

Table II shows in detail the death-rate from the various causes incidental to childbirth in New South Wales for 1930.

Every puerperal death occurring in New South Wales is, as will be described later in this report, the subject of thorough investigation by officers of this Division.

Accidents of Pregnancy.—One of the many disquieting facts elicited during the investigations into the circumstances associated with the maternal deaths is the continued increase in the amount of deliberate interference with pregnancy. Apart from those deaths conclusively proved as having been caused by criminal interference, and classified under “Illegal Operations” (44 in 1930), at least some of these “Accidents of Pregnancy,” as well as some of the deaths from puerperal septicæmia following abortion and miscarriage, were undoubtedly due to deliberate meddling on the part of the women themselves. The maternal mortality rate is therefore unfairly penalised by the (unavoidable) inclusion of such cases.

Of the 33 cases classified under accidents of pregnancy, 7 were due to abortions, 17 to ectopic gestation, and 9 to other accidents—such as accidental hæmorrhage (4), hyperemesis gravidarum (4), and acute chorca (1).

The majority of the deaths from ectopic gestation were metropolitan (12). As the cause of extra-uterine pregnancy has never been definitely determined it is impossible to give any opinion as to why the condition is apparently more common in the city than in the country; and, unfortunately, until the cause—and therefore the prevention—is discovered, deaths from this disaster will probably remain at about the same level.

Illegal Operations.—Graph II eloquently illustrates the proportion to total deaths of the deaths from illegal operations during the last sixteen years, until in 1930 it reached the figure of 14·4 per cent. of the total puerperal deaths.

This increased incidence of miscarriages and abortions—which cannot be accidental—may also be demonstrated by a study of the figures shown in the records of the Coast Hospital over the last twelve years. Whereas in 1919, out of a total of 3,210 female patients treated, 54 were cases of abortion (*i.e.*, 1·7 per cent.), by 1930 the total number of female patients (6,090) had not quite doubled, yet the number of abortions treated increased sixteen fold—being 887 for this year. (The majority of metropolitan cases of sepsis following abortion are treated at the Coast Hospital.)

As is generally the case elsewhere, the number of deaths from illegal operations is greatest in large centres of population, and Sydney is no exception, although the population of New South Wales is fairly evenly divided between the city and the rest of the State. This is no doubt mainly due to the fact that the means of obtaining the desired termination of pregnancy is greater in the city than in the country; for, although the metropolitan deaths from this cause were 28 as against 16 in the country (and of those 16, again, 6 occurred in the city of Newcastle and suburbs), many of these 28 victims were country women who had come to the city for this particular purpose.

Among the deaths from illegal operations one might expect to find that the majority were single women, driven to this desperate act by despair, but such is by no means the case—the majority of them were married women, already the mothers of children.

Puerperal Hæmorrhage.—These deaths numbered 36, a figure which should be capable of being lowered considerably, with our available knowledge of the treatment—if not of the prevention—of such conditions as placenta prævia and post-partum hæmorrhage, which comprise these cases. Furthermore, it would not be surprising, in a country of great distances, considering the impossibility (very often) of obtaining medical help speedily, to find a high death rate from puerperal hæmorrhage in outlying places, but, as a matter of actual fact, the country cases did not far outweigh those in the city, being 20 as against 16.

In the majority of cases the post-partum hæmorrhage followed manual removal of adherent placenta.

Puerperal Septicæmia.—The deaths from this cause (42 following labour, and 38 following abortion and miscarriage) constitute approximately one-third of the total maternal deaths, and are a serious reflection upon our standard of midwifery. Leaving out the 38 deaths in the latter class (at least some of which, as stated above, are known to have been self-induced), analysis of the 42 cases following labour discloses some pertinent facts. As is commonly found to be the case, the dangers of dystocia and other conditions calling for interference on the part of the medical attendant (practically all of these cases were delivered by medical practitioners), are greater, as regards sepsis, to the city mother than to the country one. Of these 42 cases, 25 occurred in the metropolis—and all but 5 of them were difficult cases involving much manipulation. Though many were sent in to the public maternity hospitals as “failed forceps” cases or after other unsuccessful attempts at delivery outside (even necessitating, in some cases, delivery in hospital by Cæsarian section), there is no doubt at all that the infection was introduced before delivery, and only 3 deaths from sepsis occurred in hospitals when there had been no handling outside. This is an interesting point, as so many authorities consider the concentration of puerperal cases into large institutions a very grave potential source of danger, and especially interesting in that the three cases were all extremely difficult ones—2 involving manual removal of the placenta and one terminating in Cæsarian section.

The five spontaneous cases were as follows:—One patient was delivered at home of a macerated foetus (no doctor in attendance); in one case the woman was delivered on the floor before the arrival of doctor or nurse; in the third case the patient was a young, single girl, attended in a very poor and dirty home between the doctor's visits by her mother only; another had a normal labour in a public maternity hospital, and some days after her return home developed a hæmolytic streptococcal septicæmia (while her unmarried sister developed scarlet fever); the fifth case was one of perfectly normal labour under the best possible conditions as regards asepsis and nursing—the only patient in a good private hospital—and the source of infection was never traced.

Of the 17 country deaths, 3 only were normal deliveries. One occurred under filthy conditions; another was an aboriginal woman, delivered by other aborigines. The remainder were all difficult cases necessitating interference.

Albuminuria and Eclampsia.—It is probably in cases of albuminuria and pre-eclampsia that the results of adequate ante-natal care are best seen, and the year 1930 shows a most striking and gratifying diminution in the number of deaths from these causes—41. This class also includes cases of pyelitis and pyelonephritis, as well as all toxæmias of pregnancy.

That the decrease in these deaths is partly due to the increased facilities for ante-natal care offered to women in the metropolis, as well as to the more intensive educational campaign concerning the need for such care which it is possible to carry out in the city, is not too extravagant a claim when one considers that only 12 of the 41 deaths occurred in the metropolitan area as against 29 in the country districts. Even of these 12, only 5 received adequate care during pregnancy, despite the fact that it was easily available in all cases, and that at least 2 out of the remaining 7 had had albuminuria previously and had been urged to attend regularly for examination.

One-half of the 29 country cases either did not call the doctor in until labour commenced, or else refused to send regular specimens of urine for examination or to obey the rules for diet and treatment recommended by him. In fact, one might justly claim that only 5 of these 29 cases, too, were fatal in spite of adequate supervision.

These facts indicate very clearly that at least some headway has been made in the fight against ignorance and carelessness on the part of the average expectant mother, and that increasing supply of ante-natal care is creating increased demand, thus indicating the need for continued extension of propaganda along these lines.

Phlegmasia Alba Dolens, Puerperal Embolism, and Sudden Death.—The number of deaths from these causes remains fairly constant. Four deaths followed on femoral thrombosis; in two of the cases the patients had suffered before pregnancy from varicose veins of the legs, and both of them died suddenly during the puerperium of pulmonary embolism, after rising from bed in disregard of medical warnings.

The other deaths in this class were mainly very dramatic and sudden, occurring quite unexpectedly after normal labours. Two of them followed abortions. In the light of our present lack of knowledge of the cause of such disasters, it would appear that most of the deaths in this group must at present be regarded as inevitable.

Other Casualties of Childbirth.—Under this heading are grouped Accidents of Labour (deaths after Cæsarian section, 12; difficult instrumental delivery, 2; and other accidents—such as spontaneous rupture of the uterus—and deaths from medical causes, 29); Puerperal Diseases of the Breast, 1; and Other Deaths following Labour, *e.g.*, two cases of puerperal insanity.

Indications for Cæsarian section were mainly disproportion between the foetal head and pelvis, various deformities of the pelvis, in one case a previous complete tear of the vaginal vault resulting in a hernia of the bowel, and one case of eclampsia. Some of the patients were already *in extremis* when the section was performed as a last resort; several others recovered from the operation, but developed acute intestinal obstruction some days later.

Among the Other Accidents of Labour are grouped many cases in which it is impossible to say to what extent the pregnancy affected the ultimate course of the disease and contributed to the fatal termination. Many degrees of myocarditis, pernicious anaemia, pulmonary tuberculosis, acute gastro-enteritis, and lobar pneumonia comprise such cases. Four of the deaths occurred under anaesthesia during delivery; at least one of these cases had a mitral regurgitation.

Two cases died after complete inversion of the uterus.

In three cases spontaneous rupture of the uterus occurred. All were multiparæ; one gave a history of an abdominal section for the drainage of a large pelvic abscess two years previously (following on a miscarriage), so that there may have been some degeneration of the uterine musculature or weakness due to adhesions. The rupture occurred suddenly, in the first stage of labour.

The second and third cases occurred, also, in the first stage, both patients being in public maternity hospitals, having regular pains, when the rupture occurred; in the second patient the cervix was dilating slowly owing to a breech presentation. The third case was that of a IV-para with a history of septicaemia after her first labour three and a half years previously, followed by a stillbirth and then a normal labour, but giving no history of any other acute infection, although post-mortem examination showed a very marked and generalised degeneration of the uterine muscle, so distributed that it would appear to have been toxic in origin.

THE ADMINISTRATIVE CONTROL OF MATERNAL MORTALITY.

During the year 1930 the activities of the Division of Maternal and Baby Welfare have, on account of financial stringency, been enabled to undergo very little further increase. Nevertheless, the considerable extension of activities which was made possible in the preceding year by an increase of medical and nursing staff, has been maintained, and the supervision of the work of midwives and private hospitals in the metropolitan area was, during 1930, extended to all parts of New South Wales. Four of the seven supervisory-nurses employed by the Division are now constantly occupied in the country districts.

The administrative control of maternal mortality in New South Wales will be considered under eight headings:—

1. *The Training of Medical Practitioners and Midwives.*—The curriculum of the Medical School of the University of Sydney continues to afford considerably increased facilities for the acquisition of both theoretical and practical knowledge of obstetrics by the medical student.

With the extension of training in this subject during recent years, special emphasis has been laid on the importance of ante-natal supervision of the expectant mother and post-natal care of both infant and mother. This improved training of the medical student is already beginning to show in a higher standard of obstetrics among the younger medical practitioners.

The training of midwives, also, is becoming more intensive. About 92 per cent. of all the midwives registered in New South Wales are certificated nurses, who have received their training at one of the recognised midwifery training schools. The registration of practising midwives is renewable annually, so that close touch is kept with them by the Nurses' Registration Board.

The Supervision of Midwives' Practice.—Regular inspection of midwives is carried out by the supervisory-nurses, both in Sydney and throughout the State. Inspections of midwifery bags and instruments, examination of registers and explanation of the regulations of the Nurses' Registration Board are carried out in this way, and are particularly beneficial in the case of older, often uncertificated, midwives, many of whom are glad of this opportunity of acquiring knowledge concerning recent advances in medical and nursing science. The modern methods of nursing and feeding premature infants, for instance, are demonstrated frequently to the older and less up-to-date midwives by the supervisory-nurses, and a special pamphlet dealing with this important matter has been published by the Division and is distributed by them on their rounds of inspection.

As stated above, during 1930 the supervision of the practice of midwives and of private hospitals has been carried throughout the State by four of the supervisory-nurses. Every part of the country has been visited at least once, most places twice, and some parts still more often.

As will be discussed later, since puerperal pyrexia has been declared a notifiable condition to the Nurses' Registration Board by the midwife, very close co-ordination has been maintained with the Board by the Division of Maternal and Baby Welfare in regard to such cases.

3. *The Control and Supervision of Private Hospitals.*—A more modern Private Hospitals Act is badly needed in this State, the present one being very limited in its scope. By means of the supervisory-nurses, however, much closer contact is possible between this Division and private hospitals, and puerperal pyrexia or infection occurring in any of them is immediately investigated.

Full details of the administration of private hospitals will be found on pp. 23 and 24.

4. *Provision of Adequate Public Maternity Accommodation.*—This is a matter which comes under the jurisdiction of the Hospitals Commission.

Unfortunately, the great dearth of public maternity beds, particularly in rural districts, is not likely to be remedied until the financial position clarifies. Some of the larger country hospitals have maternity blocks, and in some districts the difficulty is overcome to a small extent by the provision of beds for maternity cases in Bush Nursing Association and Country Women's Association nursing homes.

5. *Notification and Investigation of Cases of Puerperal Infection.*—Since puerperal sepsis continues to be responsible for about one-third of the total maternal deaths in New South Wales, it is realised that until this problem is attacked at its base we shall not be on the way towards a permanent reduction in our maternal mortality rate. The question is fraught with many difficulties, but it is felt that with the introduction of the new regulations dealing with the notification (by both medical practitioner and midwife) of actual and potential puerperal infection, at least some beginning has been made.

The regulations under the Nurses' Registration Act and the proclamation issued under the Public Health Act now respectively define puerperal pyrexia and puerperal infection in an unequivocal manner. In the case of midwives, the regulation states that "every midwifery nurse shall immediately report to the Nurses' Registration Board in writing if she is in attendance on a case of puerperal pyrexia, and shall forthwith take all reasonable precautions to provide against the spread of possible infection, until she obtains advice from a medical practitioner that the patient's condition is not due to infection of puerperal origin. . . . For the purpose of this regulation 'puerperal pyrexia' is defined as any febrile condition occurring in a woman from the end of the first to the end of the tenth day after abortion, miscarriage, or childbirth, in which a temperature of 100·4 deg. F. (38 deg. C.), or higher, occurs upon more than one day during the period."

If the puerperal pyrexia proves to be due to infection of puerperal origin, the regulations provide further that the nurse is not allowed to attend any other pregnant or lying-in woman until she has obtained the written permission of the Board to do so.

Immediately upon receipt of a notification of puerperal pyrexia from a midwife, the Nurses' Registration Board reports the matter to the Division of Maternal and Baby Welfare. Should the pyrexia prove to be due to puerperal infection, a medical officer of this Division then follows up the case in close co-ordination with the Nurses' Registration Board.

During the year 1930, 169 notifications of puerperal pyrexia were received from midwives by the Nurses' Registration Board, the majority of cases occurring after full-time delivery.

It rests entirely with the Chairman of the Nurses' Registration Board (the Director-General of Public Health and President of the Board of Health) to decide for how long the midwife who has been in contact with a case of puerperal infection shall be prohibited from attending further cases, each case being judged upon its own merits. It is endeavoured not to penalise the nurse unduly, but, nevertheless, the interests of her other patients are considered paramount.

In the case of puerperal infection occurring in a private hospital (this condition also being notifiable under the Private Hospitals Act) no new lying-in patient may be admitted until written permission is received from the President of the Board of Health. Here, again, every effort is made not to penalise unduly the hospital in the interest of the patients.

In the case of the medical practitioners notification under the Public Health Act is required whenever there is "any local or general condition, accompanied by fever arising from, or dependent upon, any form of infection of puerperal origin occurring in a woman from the end of the first to the end of the tenth day after abortion, miscarriage, or childbirth."

The receipt of a notification from a medical practitioner acts as a check upon midwives and licensees of private hospitals, as immediately steps are taken to ascertain whether any nurse has been in attendance or the patient has been in any private hospital.

Notifications of 277 cases of puerperal infection were received from medical practitioners during 1930. Of these, 115 cases (43 per cent.) occurred after labour, and 152 cases (57 per cent.) after abortion. Sixty-eight of the cases notified terminated fatally, but as there were altogether 80 deaths from puerperal septicæmia during the year, it is evident that there are still many medical practitioners who fail to notify cases, although they have all been circularised as to the necessity to do so. Every effort is made to enforce this regulation, but some of the metropolitan public hospitals, as well as many country practitioners, are still very lax with regard to notifications, mainly, it is true, in cases where sepsis follows abortion. In such cases (as there is no nurse in attendance, as a rule), the matter may not come under notice unless or until the patient dies. Where notification of puerperal infection has been received by the Nurses' Registration Board from a midwife, a medical officer of this Division gets into touch with the medical practitioner in charge of the case and reminds him of the obligation on his part to notify it under the Public Health Act.

6. *Provision of Ante-Natal Clinics.*—The importance of ante-natal care of the expectant mother continues to become increasingly apparent, and although progress is very slow and the majority of women continue to refuse to seek or accept ante-natal supervision even when it is offered, it would appear that the widespread propaganda being carried out in New South Wales, as in every civilised country, is beginning to have its effect on public opinion, and that the majority is a slowly decreasing one.

The medical profession generally is becoming more insistent upon the necessity for such care, and great efforts to educate the general public along these lines are made by this Division by means of films, lectures, articles in the press, radio talks, and so on. Full advantage is taken of the peculiar opportunities of the Baby Health Centre nurse in her role of visitor and general confidante to urge the expectant mother to report to her doctor or to attend an ante-natal clinic early in pregnancy, but, in spite of all these efforts, the fact remains that the majority of women come into labour still without having received adequate, or even any, ante-natal supervision.

All the metropolitan public maternity hospitals have ante-natal departments, but even there the attendances are not as regular as they should be. As far as can be estimated it would appear that not more than one-fifth of the expectant mothers in the State receive ante-natal supervision. A number are not seen by a doctor until in labour—many not even then.

Five thousand three hundred and nine expectant mothers visited the Baby Health Centres during the year, but mainly for advice re baby clothes, &c., or to obtain milk orders. Every effort is made by the nurses in charge to persuade those women who are not being attended by a private practitioner to attend an ante-natal clinic, and it is largely due to their enthusiasm that the evening clinic held at the Baby Health Centre at Newtown has been so successful since its inception in June, 1929. There were 871 attendances at this clinic during 1930. Although expectant mothers from all suburbs were urged to attend there, it was found that, mainly owing to inability to afford the tram-fares, the women who presented themselves and who attended most regularly were chiefly local ones. It was felt that this showed the need of an extension of such centres to other districts. As a result of this experience weekly ante-natal sessions are now, at the time of writing, being conducted at nine other suburban Baby Health Centres, so arranged that there is one of them within reasonable access of every suburb of Sydney, and every metropolitan expectant mother is now enabled to obtain advice and supervision without having to travel unduly long distances to do so.

The great need would appear to be for some practical scheme of getting in touch with the expectant mother during her first pregnancy. Of the women attending at the Newtown clinic the majority (62 per cent.) were multiparæ. Most of those attending were either being nursed in their own homes, by midwives, only, or intended to enter public maternity hospitals but were unable to attend the ante-natal clinics there regularly, and so would ordinarily have received no supervision.

Cases requiring special treatment were referred to private practitioners or to the public hospitals, and I should here like to record my thanks to the medical staffs of the various public maternity hospitals for the way in which they so readily admitted patients at all times, and in every way co-operated with this Division in providing for the care and treatment of abnormal cases.

As dental work is such an essential part of ante-natal care I should also like to express my appreciation of the dental treatment afforded by the Dental Department of the Rachel Forster Hospital for Women and Children to the numerous patients sent there from the various ante-natal clinics.

7. *Education of the Public.*—No opportunity of making use of this important means of dealing with the problems of maternal welfare is allowed to pass. Articles are published regularly in some one hundred newspapers throughout the State, and lectures are given wherever possible. Owing to the financial depression it was, unfortunately, impossible to take full advantage of the unlimited opportunities for such propaganda as is afforded through the medium of the Women's Branch of the Agricultural Bureau and the Country Women's Association. Nevertheless, Dr. Sandford-Morgan visited several country towns and addressed meetings convened by these organisations, and it is hoped that in the future this aspect of the work of the Division may be extended considerably.

A booklet entitled "Healthy Motherhood," dealing with all aspects of ante and post-natal care was published by the Division during the year and circulated throughout the State. Films have also been shown and radio talks given.

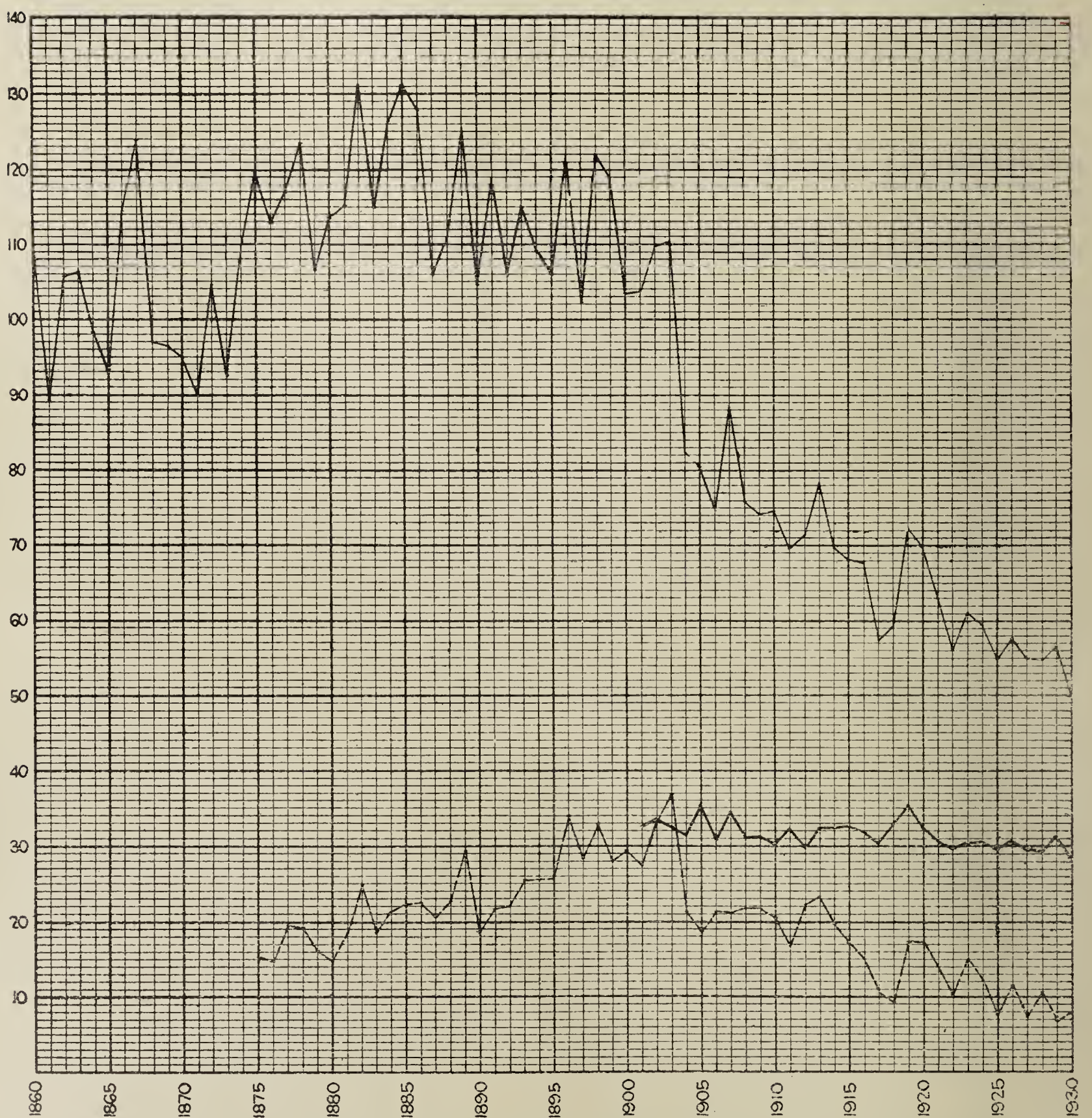
School-girls and Girl Guides have been given classes dealing with personal hygiene and the care of infants. It is impossible to underestimate the scope for education in modern methods of mothercraft afforded by the latter organisation, the subject being given great prominence in the course of training of Guides at all stages.

8. *Research.*—There is probably no branch of medicine to-day in which there is a greater field for research than in the problems dealing with maternal mortality. As a preliminary to such research which, it is hoped, may be carried out in this State in the future, it is first of all essential that there should be

GRAPH No. 3.

INFANTILE MORTALITY IN NEW SOUTH WALES, 1875-1930.

Annual Death Rate of Children under 1 Year, per 1,000 Births
Deaths from Diarrhoea and Enteritis of Children under 1 Year, per 1,000 Births
Infantile Mortality in the 1st Month of Life, 1900 to 1930. ,, ,,



compiled definite knowledge of the facts underlying each maternal death. With the realisation of the need for such a working basis, investigations into every death of a woman in child-birth, or of a new-born infant, have continued to be carried out during the year.

The neo-natal investigations have been completed (and at the time of writing are in process of classification) as it is considered that a sufficient number of these have been carried out to furnish the required data.

The investigations into the maternal deaths are still being carried out. A comprehensive form of inquiry is used for the purpose, and the investigations are conducted by the medical officers of the Division, assisted by the supervisory-nurses. At first these inquiries were viewed with some misgivings by the majority of the medical profession, but it is now found that most of the information sought is readily supplied, and the carrying-out of these necessarily delicate and often tedious inquiries is being considerably assisted by the willing co-operation of the medical practitioners themselves, due largely, in the first place, to the whole-hearted support given to the matter by the Council of the New South Wales Branch of the British Medical Association.

Already much that is both important and instructive has been learned from these investigations, as has been referred to in the earlier paragraphs of this Report.

Although the question of maternal welfare is ultimately mainly a financial one, it is felt that, when the time comes for a full expansion of the work that has been planned, the foundations will have been laid so securely that, in spite of temporary restrictions, the control of maternal mortality in New South Wales will not be found to have been at a standstill.

PART II.—INFANT WELFARE.

Infant welfare work in New South Wales continues to expand and show gratifying results.

The infant mortality rate in New South Wales, which has continued to fall more or less steadily since the beginning of the century, has, during 1930, reached the figure of 49·81 per 1,000 births. Compared with many other countries this is an exceptionally low rate, and particularly so considering that the metropolitan death-rate fell even lower, being 49·50 per 1,000 births. While such a fall is distinctly encouraging, it is, nevertheless, fully realised that even these figures should be capable of being reduced still further. The loss of 2,597 infants under one year old to the State is a very serious one.

More than one-half of the total number of infant deaths occurs during the first month of life, and of that number the majority take place during the first few days.

The investigations into the neo-natal deaths which have been carried out (as referred to in the first section of this Report) have confirmed the view that the factors underlying them are the same factors which underlie the maternal deaths—neo-natal deaths occurring mainly from trauma after difficult deliveries, among premature infants, or as sequels to toxæmias of pregnancy—and only when we solve the problems of maternal mortality and morbidity will those of neo-natal mortality, also, be solved.

The general fall in the death-rate among infants has coincided with the increased knowledge of mothercraft disseminated throughout New South Wales by this Division, mainly by means of the Baby Health Centres, as well as through articles in the daily and weekly press, radio talks, films, and personal correspondence, and it is felt that this improvement is at least partly brought about by such propaganda, especially as the deaths of infants (other than neo-natal deaths) occur largely among the artificially fed, and the importance of breast-feeding is the main point emphasised by our teachings.

By simple methods which can be carried out in the poorest home, mothers are taught that not only is breast-feeding eminently desirable, but that it is always at least partially possible, and that obedience to simple natural laws, with regard to babies, results in raising the general standard of health.

Owing to the fact that it is very often necessary to complement breast-feeding for a time, especially in the case of infants who have been mishandled during the first few days of life, there is a fairly popular misconception that Baby Health Centres stand, to a certain extent, for artificial feeding.

This is emphatically not the case, and, in order to stress this point, an analysis as to the success of breast-feeding among infants attending the Centres was carried out during 1930. The feeding methods practised in the case of every single baby who attended a Baby Health Centre anywhere in New South Wales at any time during the year was carefully noted, and the tabulated results are both instructive and gratifying. The figures, moreover, probably tend somewhat to under-estimate the amount of breast-feeding normally carried out, in more favourable years, as it was found upon compiling them, that, in industrial areas, where poverty and unemployment have increased, many mothers who would almost certainly have been able to breast-feed have themselves been so undernourished as to have to resort to artificial feeding for their babies.

In spite of this, it was found that in the first month of life (see Table III) an average of 93 per cent. of all the babies attending the eighty-four Centres were fully or partially breast-fed. In many individual Centres the figure reached 100 per cent., and it is interesting to note that these represented all sections of the population, metropolitan and country, industrial and well-to-do. In the second month the average percentage was still over 90, and by the end of the ninth month almost 70 per cent. of all babies attending were still breast-fed.

TABLE III.—Showing Breast-feeding carried out at the Baby Health Centres.
(Average percentage of infants fully or partially breast-fed.)

1st month	...	...	...	...	...	...	...	...	93.5
2nd	„	...	...	...	...	...	...	...	90.6
3rd	„	...	...	...	...	...	...	...	87.1
4th	„	...	...	...	...	...	...	...	82.0
5th	„	...	...	...	...	...	...	...	78.5
6th	„	...	...	...	...	...	...	...	75.3
7th	„	...	...	...	...	...	...	...	71.5
8th	„	...	...	...	...	...	...	...	69.6
9th	„	...	...	...	...	...	...	...	68.0

While it has been proved conclusively that all women can at least partially breast-feed their babies, it is also fully realised that difficulties are very often encountered, and it is the object of the Baby Health Centres to prevent these difficulties occurring, in the first place, or to show the mothers how to overcome them when they do arise.

When it is proved by “test feeding” that artificial feeding is, to some extent, inevitable, suitable “modification” of cow’s milk (fresh whenever possible, otherwise dried) is recommended, and the mother is shown how to take every precaution against contamination of the milk and feeding utensils.

Twenty-seven thousand six hundred and seventeen of these “test-feedings” were carried out at the Centres during the year.

The success of such teachings is demonstrated during every epidemic of gastro-enteritis. Not only do the breast-fed babies nearly always escape infection, but even among artificially-fed infants it is found that the majority of sufferers are those who have never been regularly brought to the Baby Health Centres or whose mothers refuse to follow instructions.

There is, unfortunately, in addition to the country mothers, who are prevented by distance from availing themselves of the Centres, a small section of the community who refuse to give their infants the benefit of skilled advice and supervision, and it is upon this small minority that our efforts must be concentrated in the future, until their prejudice or indifference is overcome.

Personal calls in their own homes upon these and other mothers is an important part of the Baby Health Centre nurses’ duties. As soon as a birth is registered—in the metropolis or in a country town where there is a Centre—the sister-in-charge ascertains the fact from the registrar and calls upon the mother with offers of advice and urges her to bring her baby along to the Centre regularly.

During 1930 the total births in New South Wales numbered 52,136. Nearly one-half of all these infants (23,279) were visited in this way, and 76,824 subsequent visits were paid to babies whose mothers were for some reason or other unable to bring them along to the Centres, or to homes in response to requests from private doctors. Largely as a result of these visits, 24,540 new babies (as against 22,645 in 1929) were enrolled during the year, bringing the total number of individual babies attending the Baby Health Centres up to 43,188 for the year (an increase of 6,708 over the year 1929).

Many other babies were reached by letters from the Baby Health Centres apart from a large number whose mothers corresponded directly with me through this Division.

The attendances at the Centres have increased steadily, year by year, since their inauguration, the total number for 1930 reaching 408,136—56,976 more than during 1929.

Among these attendances infants under one year old predominate; the total in that age group for the year was 340,871, which was 46,402 in excess of the preceding year.

The number of older children who attend also continues to increase. It is particularly gratifying to note that the total attendances of children during their second year of life are reaching higher numbers—this year being 51,215 (10,000 more than in 1929). Parents have yet to realise, however, that as much care is required during the second year of life as during the first, and that much of the good result achieved by breast-feeding or by properly supervised artificial feeding in the early months of a baby’s life can be nullified by carelessness in the second year.

It is necessary to stress the point that no sick infants are ever treated at the Baby Health Centres, which—as their name indicates—exist to “keep the well baby well”; cases other than errors or difficulties of feeding are sent on to public hospitals or private practitioners. Each Centre has an honorary medical officer who attends weekly to deal with difficult feeding cases.

The nurses employed at the Baby Health Centres number 108. They are all general-trained nurses who also hold their mothercraft (“Tresillian”) training certificates; many are also midwifery-trained.

As all have passed through the same Mothercraft Training School, the advice given at the Centres is uniform, and mothers moving to other parts of the State are thus assured, wherever they may visit a Baby Health Centre, of receiving the same instructions regarding baby’s care and feeding.

This uniformity of advice is further maintained by meetings of the medical and nursing staffs of the metropolitan Centres, at which papers are read and discussed and any changes in policy or management can be brought forward.

Owing to the financial depression, only 4 new Centres were established during 1930, bringing the total number in the State up to 84—39 metropolitan, and 45 country. The new Centres opened were all country ones, and are situated at Young, Cowra, Inverell and Temora. Many other country towns are awaiting the establishment of Centres, the rooms and equipment in most cases having been offered by the local branch of the Country Women’s Association, but until the economic situation permits of the appointment of more nurses, advantage cannot, unfortunately, be taken of these offers of co-operation.

Infant welfare work has also been carried out by this Division in many other directions; many meetings have been addressed throughout the year by members of the medical and nursing staffs, generally under the auspices of the Agricultural Bureau or the Country Women’s Association. Classes in mothercraft have been held for school-girls and for Girl Guides, radio talks have been given, and films shown.

Graph No. 4.
DIARRHOEA and ENTERITIS.

(Under 2 years, Black. Over 2 years, Red.)

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1930.



During Health Week, in particular, a very active part was played by the officers of this Division—a conference, organised by the National Council of Women, dealing with the pre-school child, emphasising the need for an extension of activities so that the encouraging results which have been achieved in the case of the infant may extend over the years between infancy and school-life.

In concluding this report I desire to place on record my sincere appreciation of the practical assistance and co-operation of the Country Women's Association in furthering the scope of our activities and in helping to extend to country mothers the benefits of established Baby Health Centres.

To the honorary medical officers I express my thanks for their enthusiastic service and loyal support.

E. SYDNEY MORRIS,
Director of Maternal and Baby Welfare.

TABLE IV.—Showing Work of Baby Health Centres.

Baby Health Centres.	Visits to Individual New-born Babies.		Subsequent Visits to Homes of Babies.		Total Attendances, including Expectant Mothers.		Individual Babies Attending Centres.	
	1929.	1930.	1929.	1930.	1929.	1930.	1929.	1930.
Alexandria	396	371	1,961	1,919	6,907	8,224	689	724
Annandale	324	266	1,626	892	2,804	1,420	284	257
Ashfield	622	659	1,021	1,531	7,807	9,297	752	815
Auburn and Depot	708	533	1,237	1,653	6,035	7,395	754	862
Balmain	566	520	1,876	1,206	7,699	8,657	764	885
Bankstown.....	540	515	589	473	3,323	5,719	404	613
Burwood	785	800	1,637	1,726	9,826	11,567	1,301	1,453
Campsie.....	841	848	2,182	1,203	7,855	9,936	979	1,336
Chatswood.....	490	479	1,226	1,425	7,719	9,076	893	1,083
Chippendale	551	503	1,004	1,059	4,307	4,321	485	475
Glebe.....	379	296	2,120	858	5,317	5,896	594	596
Granville	542	557	869	1,142	5,141	7,083	644	771
Hornsby	253	293	772	663	3,514	4,005	395	387
Hurstville and Depot	705	628	1,333	1,386	8,487	10,893	881	1,124
Kogarah	383	320	956	660	5,265	6,946	654	749
Lane Cove.....	272	237	1,585	1,759	5,257	6,319	492	459
Leichhardt	695	679	1,739	1,563	6,936	8,143	656	825
Manly.....	480	386	1,717	1,942	11,176	12,319	864	1,400
Marriekville	581	669	2,242	2,114	7,409	7,486	669	654
Mascot	351	319	1,011	728	3,727	3,614	490	486
Miller's Point.....	75	72	554	590	806	1,874	99	103
Mosman.....	334	301	1,502	1,595	8,930	10,547	567	740
Newtown	661	536	2,057	1,907	11,029	11,580	1,041	1,573
North Sydney.....	707	685	1,537	1,099	8,095	11,561	952	1,169
Paddington	548	466	1,670	1,100	7,212	7,278	770	928
Parramatta	458	497	1,596	1,274	6,996	9,596	756	898
Petersham.....	221	179	1,008	646	5,560	6,330	649	556
Pymont.....	118	111	1,045	826	2,749	2,412	244	202
Randwick	402	423	1,403	1,503	8,653	8,262	582	1,097
Rockdale	649	544	1,315	1,357	8,681	10,866	793	1,038
Rose Bay	487	510	2,109	1,777	10,500	11,807	893	1,017
Ryde	327	428	776	1,297	5,450	6,727	563	904
St. Peters	297	219	1,914	1,705	2,586	3,108	335	420
Surry Hills	332	265	990	1,068	5,385	5,689	539	614
South Kensington.....	495	498	2,869	1,892	6,319	9,258	789	759
Waverley.....	667	680	1,410	941	12,284	14,921	1,194	1,483
Woolloomooloo	227	235	1,209	1,539	7,573	7,517	733	724
Albury and Depot	181	148	1,019	1,026	5,070	5,005	459	451
Bathurst	216	180	740	900	4,033	4,176	361	485
Broken Hill—Central	229	298	182	1,457	4,218	6,104	352	407
„ „ North	106	146	952	82	3,614	3,727	283	268
„ „ Railway Town	82	94	940	919	4,267	3,927	266	265
„ „ South	83	86	906	814	2,199	2,458	188	171
Cessnock and Depot	485	383	1,670	2,318	5,199	5,431	543	612
Cootamundra and Depot	124	158	1,020	964	1,921	2,402	210	287
Cowra (5 months) .....	...	46	...	109	...	292	...	68
Dubbo and Depot.....	232	263	610	596	3,211	3,780	306	444
Forbes	42	142	28	858	24	1,921	20	246
Goulburn and Depot	367	371	1,753	1,698	6,233	7,698	679	737
Hamilton and Depot	668	685	1,787	1,729	10,612	12,218	1,119	1,190
Inverell (3 months).....	...	25	...	117	...	271	...	78
Kurri and Depot	348	207	1,292	1,190	721	5,058	508	523
Lithgow.....	305	365	1,633	1,663	3,928	5,022	394	93
Mayfield and Depots	579	543	2,075	1,864	8,195	9,868	840	995
Moree.....	115	100	200	303	2,272	2,985	98	180
Muswellbrook .....	...	116	...	241	...	1,424	...	159
Newcastle and Depots.....	580	518	2,224	1,897	8,135	8,500	887	1,095
New Lambton and Depot	407	333	1,738	1,130	3,962	3,826	526	439
Orange	335	293	927	879	3,242	3,945	427	504
Singleton	100	74	735	412	1,619	1,598	223	244
Tamworth	253	203	883	769	6,424	6,031	392	593
Wagga and Depots	301	388	1,399	1,170	4,798	5,732	992	600
West Maitland and Depot	330	272	1,556	1,518	5,548	5,741	632	644
Wollongong.....	227	222	664	738	3,635	4,282	459	539
Yass	43	69	1,113	1,415	2,752	2,266	173	229
Young (4 months) .....	...	24	...	30	...	108	...	33
Total	24,207	23,279	81,713	76,824	351,160	413,445	36,480	43,188

TABLE V.—Summary of Activities of Baby Health Centres, 1930.

1. Expectant mothers—			
Number visiting Centres for first time	3,464		
Number of visits paid to Centres subsequently	1,845		
Number visited in own homes by nurses	1,374		
2. Babies enrolled—			
Total number of individual babies attending Baby Health Centres	43,188		
Number of new babies enrolled during year	24,540		
3. Visits by nurses—			
Number of primary visits to newborn babies	23,279		
Number of subsequent visits to babies	76,824		
4. Feeding—			
Test feedings given at Centres	27,617		
5. Instruction—			
Number of letters requesting advice answered by nurses	1,175		
Lectures and classes held by nurses	148		
6. Attendance—			
Number of attendances by babies under 1 year of age	340,871		
Number of attendances over 1 year and under 2	51,215		
Number of attendances over 2 years and under 3	9,134		
Number of attendances over 3 years of age	2,134		
Miscellaneous visits—Mothers without infants, &c.	4,782		
Total visits paid by nurses—			
To expectant mothers	1,374		
To babies, primary and subsequent visits	100,103		
Total attendances at Baby Health Centres—			
By expectant mothers	5,309		
By babies and toddlers	408,136		
			101,477
			413,445

SECTION I—C. COMMUNICABLE DISEASES.

1.—NOTIFIABLE INFECTIOUS DISEASES RECORDED IN NEW SOUTH WALES DURING THE YEAR ENDED 31ST DECEMBER, 1930.

(F. S. WEARNE.)

Public Health Acts, 1902–1921.

The Public Health Act, 1902, provides that the Governor may, by Proclamation in the *Government Gazette*, declare that any disease therein-named is an infectious disease. No alteration to the existing list was made during the year.

	Notifiable from—	Cases and Deaths Notified.					
		1928.		1929.		1930.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever and paratyphoid	1st January, 1898	453	60	438	45	380	48
Scarlet fever	„	5,531	105	5,219	78	4,400	54
Diphtheria or membranous croup	„	3,835	168	4,274	215	4,051	176
Bubonic plague	23rd January, 1900 .....	...	...	...	...	...	...
Infantile paralysis (acute anterior poliomyelitis)	1st February, 1912	30	2	241	29	30	6
Epidemic cerebro-spinal fever (meningococcal meningitis)	11th October, 1915	31	8	28	10	43	12
Encephalitis lethargica	1st April, 1926	18	23	26	30	14	20
Cholera	12th August, 1927 .....	...	...	...	...	...	...
Typhus fever .....	„ .....	...	...	3	...	2	...
Yellow fever .....	„ .....	...	...	...	...	...	...
Puerperal infection	16th August, 1929 .....	...	...	44	79	269	82
Total		9,898	366	10,273	486	9,189	398
Population at 31st Dec.		2,446,874		2,479,147		2,502,039	

The number of cases of the above diseases notified in each district in 1930, deaths therefrom and age and seasonal incidence are shown in Tables I–VI, pp. 36–44. Pulmonary tuberculosis is notifiable under the Public Health (Amendment) Act, 1915, and venereal diseases under the Venereal Diseases Act, 1918 (see below).

The figures for 1930 show a decrease in both case notifications and deaths compared with 1929.

Typhoid Fever.—380 cases were notified, a decrease of 58 cases on the figures (438) for 1929. The fatality rate was about 2 per cent. higher, 48 deaths being recorded in 1930, as against 45 in 1929.

Scarlet Fever.—Although showing a decrease of over 1,100 cases, Scarlet Fever continued present in epidemic form; 4,400 cases and 54 deaths were recorded in comparison with 5,219 cases and 78 deaths in 1929. Notes on an outbreak at Lord Howe Island are included on p. 45.

Diphtheria.—Notifications numbered 4,051, a decrease of 223 cases on the figures (4,274) for 1929. The fatality rate was slightly lower, being 4·36 per cent. in 1930 and 5·03 per cent. in 1929.

Infantile Paralysis.—30 cases and 6 deaths were recorded, compared with 241 cases and 29 deaths in 1929.

Cerebro-spinal Meningitis.—43 cases and 12 deaths were notified in 1930 as against 28 cases and 10 deaths in 1929.

Encephalitis Lethargica.—14 cases and 20 deaths were notified. It is found on inquiry that a number of the deaths are due to non-notifiable forms of encephalitis, such as cerebral abscess, brain tumours, &c.

Bubonic Plague.—No case of plague was reported in 1930. Systematic rat-trapping was continuous, and no infection was found in the 4,097 rats examined in the Microbiological Laboratory (see p. 125).

Smallpox.—No case of smallpox was reported in the State during 1930.

Leprosy.—The Annual Report on Leprosy in New South Wales will be found in Section III (p. 107). Four cases and 4 deaths were reported during the year. At the end of 1930 there were 20 lepers (17 males and 3 females) under detention in the Lazaret. Medical practitioners attending or becoming aware of cases of leprosy or suspected leprosy are required to notify the cases, in writing, under Part III, Division 2, of the Public Health Act, 1902.

Typhus Fever.—Two cases of endemic typhus were reported in the Metropolitan District in 1930 (see report, p. 47).

PULMONARY TUBERCULOSIS—PUBLIC HEALTH (AMENDMENT) ACT, 1915.

As a result of the proclamation issued in 1929 extending notification of pulmonary tuberculosis to the whole State, 1,917 cases were recorded, as compared with 1,215 in 1929. 1,265 notifications were from the Metropolitan District, and 652 from other parts of the State. There were 1,022 deaths. Various aspects of tuberculosis are discussed in the reports of the Director of Tuberculosis (p. 59) and of the Medical Superintendent of the Waterfall Sanatorium (p. 113).

VENEREAL DISEASES ACT, 1918.

The notifications for 1930 of the various forms of venereal disease numbered 5,225, or one less than in 1929. Several aspects of the problem are dealt with in the report of the Commissioner (p. 53).

TABLE I.—Showing the number of notified cases of, and deaths from, the following diseases :—Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Plague, Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection in the METROPOLITAN COMBINED DISTRICTS for the year ended 31st December, 1930.

Municipality or Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
METROPOLITAN MUNICIPALITIES.																	
Sydney, City of ...	109,230	7	1	122	1	158	6	1	1	3	...	...	1	165	83	22	4
Alexandria	10,350	1	1	14	1	16	2	...	...	...	...	...	...	12	4	2	1
Annandale	13,110	1	...	23	...	21	2	...	...	...	...	...	...	11	5	7	2
Ashfield	39,670	6	...	86	3	41	1	...	...	...	...	1	1	15	16	2	1
Auburn	19,790	2	1	42	...	43	2	3	1	...	...	...	...	10	6	2	2
Balmain	33,160	...	...	39	...	26	1	...	...	...	...	...	...	33	15	6	2
Bankstown	21,950	3	2	61	...	44	2	...	...	...	...	...	...	17	4	4	1
Bexley	20,230	4	...	61	...	33	3	...	...	...	...	...	...	9	4	2	...
Botany	7,860	4	...	38	...	39	1	...	...	...	...	1	...	7	...	...	...
Burwood	19,440	1	...	38	1	35	1	...	...	...	...	...	...	16	6	2	...
Canterbury	73,030	9	1	311	7	162	5	...	...	1	...	...	1	65	30	8	4
Concord	22,290	2	...	86	1	59	2	...	...	...	...	...	...	10	8	1	...
Darlington	3,660	...	...	4	...	1	...	...	...	...	...	...	...	5	1	1	...
Drummoyne	29,010	...	1	64	1	28	1	...	...	...	...	1	...	33	9	3	1
Eastwood	2,940	1	...	2	...	10	...	...	...	...	...	...	...	12	5	1	...
Enfield	13,940	1	...	72	...	21	...	...	...	2	...	...	...	9	9	3	1
Erskineville.....	7,610	...	...	25	...	13	...	...	...	...	...	...	...	7	8	2	2
Glebe	23,130	1	1	52	...	40	2	...	...	1	...	...	...	26	12	6	1
Granville	19,090	1	...	40	...	13	2	1	...	...	...	...	...	11	9	...	...
Homebush	3,170	5	...	20	1	15	...	...	...	...	...	...	...	11	5	1	...
Hunter's Hill	9,670	...	...	11	...	5	...	...	...	...	...	...	...	3	1	1	...
Hurstville	21,390	2	...	84	1	59	2	...	...	...	...	...	...	38	12	2	1
Kogarah	29,260	1	...	98	...	55	1	2	1	...	...	...	...	13	13	1	1
Kuring-gai	27,940	1	...	69	...	31	2	...	...	1	...	...	...	25	20	2	2
Lane Cove	14,770	1	...	40	1	21	1	...	...	1	...	...	...	11	4	1	...
Leichhardt	31,410	1	...	38	1	46	7	...	...	1	...	...	1	30	10	3	...
Lidcombe	15,610	3	...	39	1	24	2	...	...	...	...	...	...	39	15	2	1
Manly	26,030	2	...	22	1	9	...	...	...	...	...	...	...	8	9	5	2
Marrickville	46,490	3	...	116	...	48	...	1	...	1	1	...	...	33	19	6	1
Mascot	13,760	1	...	37	...	23	1	...	...	2	...	...	...	11	6	4	...
Mosman	24,940	3	...	29	...	12	...	2	...	...	...	1	...	10	4	...	1
Newtown	28,630	4	...	35	1	45	6	1	...	...	...	...	1	29	19	5	2
North Sydney.....	54,920	3	...	73	1	31	5	...	...	...	...	...	1	43	24	11	1
Paddington	27,040	...	...	53	1	14	2	...	...	...	...	...	...	46	19	18	1
Parramatta	17,590	2	...	37	...	20	1	1	...	...	1	...	...	12	12	...	...
Petersham	28,210	...	...	42	...	13	...	...	...	2	1	...	...	30	11	3	1
Randwick	73,610	8	...	133	2	62	5	1	...	1	...	...	2	83	43	8	2
Redfern	24,150	...	1	34	1	41	3	...	...	...	...	1	...	35	13	6	1
Rockdale	37,300	3	...	89	1	83	3	...	...	2	2	...	1	17	7	4	1
Ryde	25,570	...	...	66	...	28	1	...	...	...	...	...	...	23	13	1	...
St. Peters	13,880	2	...	29	1	31	...	...	...	...	...	...	...	10	0	1	...
Strathfield	12,140	2	1	58	1	16	1	...	...	...	...	...	...	8	3	1	...
Vauchuse	7,290	3	...	14	...	6	...	...	...	...	...	...	...	1	...	1	...
Waterloo	12,840	1	1	30	...	28	1	...	...	2	...	...	...	12	8	3	...
Waverley.....	52,190	8	1	93	1	60	1	...	...	1	1	...	...	63	22	15	2
Willoughby	42,070	1	...	89	1	35	2	...	...	2	1	...	1	21	8	4	2
Woollahra	34,250	5	1	97	...	26	...	...	...	...	...	...	...	37	14	8	1
Total	1,245,610	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
EXTRA METROPOLITAN MUNICIPALITIES.																	
Cabrarnatta and Canley Vale.	4,720	...	...	6	...	14	...	...	...	...	...	...	...	4	...	...	...
Dundas	5,540	1	...	29	...	8	...	...	...	...	...	...	...	3	1	...	...
Ermington and Rydalmere.	2,190	...	...	1	...	...	...	...	...	...	...	...	...	8	...	...	...
Fairfield	7,690	1	...	20	1	19	...	1	...	...	...	...	1	1	2	...	...
Holroyd	14,610	...	...	58	1	55	...	1	1	1	...	...	...	10	10	1	...
Ingleburn	1,620	...	...	4	...	...	...	...	...	...	...	...	...	1	1	...	...
Liverpool.....	6,190	3	...	1	...	19	...	...	...	...	...	...	...	17	1	...	...
SHIRES.																	
Hornsby	20,980	1	1	80	1	87	1	...	...	1	1	1	...	40	34	3	1
Warringah	15,450	...	...	17	...	15	1	...	...	1	1	...	...	...	1	...	...
Harbour of Port Jackson.	.....	1	...	1	...	...	...	...	...	...	...	...	...	6	...	...	...
Totals	1,324,660	116	14	2,972	35	1,907	82	15	4	26	9	5	12	1,265	624	195	46

TABLE II.—Showing the number of notified cases of, and deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Scarlet Fever, Typhoid Fever, including Paratyphoid, Pulmonary Tuberculosis, and Puerperal Infection in the HUNTER RIVER COMBINED DISTRICT, for the year ended 31st December, 1930.

District.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.																	
Adamstown.....	4,850	...	...	6	...	23	1	...	...	...	...	...	...	3	...	...	...
Carrington	3,150	1	1	1	...	4	...	...	...	...	...	...	...	2	...	...	...
Cessnock	14,040	...	...	45	1	14	...	...	...	...	...	...	1	2	5	...	...
Greta	1,500	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...
Hamilton.....	20,960	1	...	28	...	41	...	...	...	...	...	...	...	8	4	2	1
Lambton	4,460	...	...	3	...	...	...	...	...	...	...	...	...	2	2	...	...
Maitland, East ...	4,050	...	...	3	...	16	...	...	...	...	...	...	...	4	1	...	...
„ West ...	7,750	4	1	1	...	20	...	...	...	...	...	...	...	9	2	...	...
Merewether	8,190	...	...	7	...	23	...	...	...	...	...	...	...	4	3	2	...
Morpeth	1,080	3	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Newcastle	14,330	6	1	22	...	15	...	...	...	...	...	1	...	16	12	1	...
New Lambton ...	6,100	1	...	7	1	6	...	...	...	...	...	...	...	1	1	1	...
Raymond Terrace	870	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...
Singleton	3,410	2	...	3	...	6	...	...	...	1	...	...	...	1	1	...	...
Stockton	5,440	3	1	2	...	3	1	...	...	...	...	...	...	2	2	...	...
Wallsend	7,380	...	...	10	...	32	...	...	...	...	...	...	...	...	2	...	...
Waratah	17,730	...	...	16	...	40	1	...	...	1	...	1	1	15	7	1	...
Wickham.....	11,830	...	...	6	...	21	...	...	...	1	...	...	...	10	3	...	1
SHIRES.																	
Bolwarra	3,390	3	...	8	...	4	...	...	...	...	...	...	...	...	1	...	...
Kearsley	23,960	...	...	36	...	76	1	...	...	...	...	1	...	4	2	1	...
Lake Macquarie ..	25,950	...	...	20	...	46	2	...	...	...	...	...	...	10	3	2	1
Port Stephens.....	3,890	...	...	...	...	...	...	...	...	...	1	...	...	1	4	...	...
Tarro	6,880	2	...	8	...	18	...	...	...	...	...	...	...	2	5	...	...
Harbour of Port Hunter.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	201,190	26	5	235	2	411	7	...	...	3	1	3	2	98	61	10	3

TABLE III.—Showing the number of notified cases of, and deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Scarlet Fever, Typhoid Fever, including Paratyphoid, Pulmonary Tuberculosis, and Puerperal Infection, in the, REMAINDER OF STATE for the year ended 31st December, 1930.

Municipality.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.																	
Aberdeen	900	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	...
Albury	9,470	2	...	6	...	219	3	...	...	...	...	...	1	3	3	...	...
Armidale	7,190	...	...	19	1	30	2	...	...	...	...	...	...	...	1	...	...
Ballina	3,380	...	...	3	...	7	...	...	...	...	...	...	...	1	1	...	...
Balranald	1,030	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Barraba	1,240	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Bathurst	9,590	2	1	57	...	37	2	...	...	...	...	...	...	1	1	3	...
Bega.....	1,980	1	1	5	...	6	...	...	...	...	...	...	...	1	...	1	1
Berry	2,540	...	...	...	...	5	1	...	...	...	...	...	...	...	...	...	...
Bingara	1,040	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Blackheath	2,580	...	...	5	...	...	...	...	...	...	...	...	...	1	3	...	1
Blayney	1,510	...	...	3	...	1	...	...	...	...	...	...	...	...	...	...	...
Bombala	1,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Bourke.....	1,690	...	...	5	1	16	1	...	...	...	...	...	...	...	...	1	...
Bowral	3,170	...	...	3	...	1	...	1	...	...	...	...	...	2	1	...	...
Broughton Vale...	240	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Braidwood	1,080	...	...	3	...	6	...	...	...	...	...	...	...	...	...	...	...
Brewarrina	670	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Broken Hill.....	23,260	95	7	19	...	37	3	4	...	...	...	...	1	156	27	...	...
Burrowa	1,230	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Camden	2,210	1	...	6	...	2	...	...	...	...	...	...	...	1	...	...	...
Campbelltown ...	2,730	...	...	4	...	5	...	...	...	...	...	...	...	2	1	1	...
Carcoar	430	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Casino	3,630	1	...	3	...	14	2	...	...	...	...	...	...	1	2	...	...
Castlereagh	490	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Cobar	1,030	...	...	...	...	...	...	...	...	...	...	...	...	9	5	...	...
Condobolin	1,960	...	...	3	...	3	...	...	...	1	...	...	...	1	3	...	...
Cooma	1,900	...	...	5	...	2	...	...	...	...	...	...	...	1	1	...	...
Coonamble	2,370	...	...	...	...	2	...	...	...	...	...	...	...	...	1	1	1
Cootamundra	4,230	...	...	4	...	2	1	...	...	...	...	...	...	4	2	1	1
Coraki	1,270	...	...	1	...	2	...	...	...	...	...	...	...	...	...	1	...
Corowa	2,670	...	...	2	...	5	...	...	...	...	...	...	...	2	...	...	...
Cowra	4,470	1	1	...	...	5	...	...	...	...	...	...	...	...	4	...	...

REMAINDER OF STATE.—Return showing the number of Cases, &c., from Country Municipalities—continued.

Municipality.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES—continued.																	
Deniliquin	3,100	6	...	5	...	2	...	...	...	...	...	...	...	3	...	...	...
Dubbo	6,040	2	...	6	1	55	2	...	...	...	...	...	...	9	3	...	...
Dungog	1,720	2	1	3	...	19	...	...	...	...	...	...	...	...	1	...	...
Forbes	5,040	4	...	17	...	...	...	...	...	...	...	...	...	2	5	...	...
Gerrington	710	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Glen Innes	4,680	3	...	1	...	7	1	...	...	1	...	...	...	2	2	...	...
Goulburn	12,660	1	1	19	...	10	...	...	...	...	...	...	...	1	6	2	...
Grafton	5,020	1	...	12	...	14	...	...	...	...	...	...	...	7	...	3	...
Grafton South ...	1,860	...	...	3	...	6	...	...	...	...	...	...	...	2	1	...	...
Grenfell	2,160	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...
Gulgong	1,460	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gunnedah	2,700	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...
Hay	2,670	1	...	20	...	...	...	...	...	...	...	...	...	...	1	...	...
Hillston	890	1	...	1	...	...	...	...	...	...	...	...	...	...	1	1	2
Illawarra Central	7,140	1	...	4	...	10	...	...	...	...	...	...	...	3	1	...	...
„ North	6,710	...	...	12	...	3	...	...	...	2	...	...	...	2	2	1	...
Inverell	5,370	1	...	2	...	7	...	...	...	...	...	...	...	3	2	...	...
Jamberoo	1,030	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Junee	3,040	...	...	4	...	27	...	...	...	...	...	...	...	1	1	...	...
Katoomba	10,060	...	...	22	...	2	...	...	...	...	...	1	...	31	10	...	...
Kempsey	3,640	...	...	3	...	12	...	...	...	...	...	...	...	2	1	...	...
Kiama	2,030	...	...	5	...	1	...	...	...	...	...	...	...	2	1	...	...
Lismore	10,190	...	...	11	...	23	...	...	...	...	1	...	...	5	3	...	...
Lithgow	15,310	1	1	11	...	40	1	...	...	...	...	...	...	2	2	2	1
Macleay	1,620	...	...	1	...	9	...	...	...	...	...	...	...	1	1	...	...
Manilla	1,470	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	...
Mittagong	1,600	...	...	3	...	2	...	...	...	...	...	...	...	4	2	...	...
Moama	630	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Molong	1,540	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Morree	3,820	...	...	3	...	3	...	...	...	...	...	...	...	1	1	...	...
Moss Vale	2,010	...	...	4	...	10	...	...	...	...	...	...	...	...	...	1	1
Mudgee	3,030	...	...	11	...	3	1	...	...	...	...	...	...	1	2	1	1
Mullumbimby ...	1,290	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...
Murrumburrah ...	3,000	...	...	13	...	2	1	...	...	...	...	...	...	3	1	...	...
Murrumbidgee ...	1,320	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Murwillumbah ...	2,970	...	...	1	...	25	...	...	...	...	...	...	...	...	1	...	...
Muswellbrook ...	2,650	1	...	11	...	2	...	...	...	...	...	...	...	2	...	...	...
Narrabri	2,710	3	...	2	...	4	...	...	...	...	...	...	...	...	...	...	...
Narrabri West ...	1,000	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Narrandera	3,600	1	...	7	...	11	...	...	...	...	...	...	...	5	4	2	...
Narromine	1,220	...	...	1	...	28	...	...	...	...	...	...	...	2	...	...	...
Nowra	2,780	...	...	3	...	5	...	...	...	...	...	...	...	1	2	1	...
Nyngan	1,410	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Orange	8,600	...	...	27	...	3	...	...	...	...	...	1	...	7	5	...	1
Parkes	5,750	31	4	11	...	9	1	...	...	...	...	1	...	2	1	...	...
Peak Hill	1,140	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Penrith	4,070	1	1	4	...	7	...	...	...	...	...	...	...	7	4	2	...
Picton	1,020	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Macquarie ...	1,860	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Queanbeyan	3,940	...	...	6	...	...	...	...	...	...	...	...	...	2	3	...	...
Quirindi	2,410	...	...	5	...	3	...	...	...	...	...	...	...	2	1	...	...
Richmond	2,080	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Scone	1,950	...	...	2	...	2	...	...	...	...	...	...	...	...	...	1	...
Shellharbour	1,680	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
Shoalhaven South	1,050	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
St. Marys	2,240	...	...	2	...	2	...	...	...	...	...	...	...	1	2	...	...
Tamworth	7,800	3	1	11	...	26	2	...	...	1	...	...	...	2	3	1	...
Taree	2,370	1	...	...	...	15	1	...	...	...	...	...	...	1	1	...	...
Temora	3,320	...	...	5	...	1	...	...	...	...	...	...	...	2	1	...	2
Tenterfield	2,640	...	...	2	...	2	...	...	...	...	...	...	...	1	2	...	...
Ulladulla	1,400	...	...	2	...	3	1	...	...	...	...	...	...	...	1	...	...
Ulmara	2,220	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Uralla	950	1	...	1	...	4	...	...	...	...	...	...	...	1	2	...	...
Wagga Wagga ...	8,980	...	...	41	...	10	...	1	...	...	...	...	...	12	10	3	3
Walcha	1,350	...	...	1	...	6	...	...	...	...	...	...	...	...	2	...	...
Wallendbeen	740	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Warren	1,310	...	...	...	...	10	1	...	...	...	...	...	...	...	...	...	...
Wellington	3,460	...	...	2	...	3	1	...	...	...	...	...	...	1	...	...	1
Wentworth	880	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wilcannia	450	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Windsor	3,330	...	...	...	...	2	...	...	...	...	...	...	...	3	1	1	...
Wingham	1,170	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wollongong	10,190	...	...	18	1	10	...	...	...	...	...	...	...	4	2	...	1
Wyalong	850	...	...	1	...	1	...	...	...	...	...	...	...	1	1	...	...
Yass	2,760	...	...	7	...	2	...	...	...	...	...	...	...	2	4	...	...
Young	3,730	1	...	4	...	...	...	...	...	...	...	...	...	4	2	...	...
Total, Municipalities....	353,840	172	19	548	4	889	28	6	...	6	...	2	4	345	168	34	19

REMAINDER OF STATE.—Return showing the number of Cases, &c., from Country Shires.

Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Enecephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
SHIRES.																	
Abererombie	3,400	...	...	11	...	2	...	...	...	...	...	...	...	1	...	...	...
Amaroo	3,210	...	...	1	...	2	...	...	...	...	...	...	...	1	...	...	...
Apsley	2,720	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ashford	2,350	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bannockburn	3,220	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barraba	2,120	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Baulkham Hills ...	6,190	...	...	21	...	13	...	...	...	...	...	...	2	1	2	...	...
Bellingen	5,210	3	1	1	...	22	2	...	...	...	...	...	2	1	3	...	...
Berrigan	4,390	...	...	8	...	1	...	...	...	...	...	...	1	...	2	...	...
Bibbenluke	2,730	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Blacktown	11,220	1	...	31	1	14	...	...	...	...	...	...	2	7	2	2	...
Bland	8,470	1	...	5	...	3	...	1	...	...	...	...	2	4	...	...	...
Blaxland	7,990	...	...	73	2	6	1	...	...	...	1	...	...	...	...	...	1
Blue Mountains ...	7,600	...	...	5	1	15	1	...	...	...	...	1	34	15	...	...	...
Bogan	2,030	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Boolooroo	3,050	2	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Boomi	3,020	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...
Boree	6,420	...	...	16	...	1	...	...	...	...	...	...	...	2	...	...	...
Bulli	11,980	2	...	22	...	41	1	...	...	1	...	...	10	25	2	...	...
Burrangong.....	5,250	1	...	2	...	...	...	1	...	1	...	...	...	2	...	...	...
Byron	7,050	1	...	4	...	5	...	...	...	...	...	...	...	2	...	...	...
Cambewarra	1,350	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Canobolas	5,690	...	...	12	...	3	...	...	...	...	...	...	1	3	2	...	...
Carrathool	3,630	...	...	2	...	1	...	...	...	...	...	...	3	1	...	...	...
Clyde	1,590	...	...	...	...	1	1	...	...	...	...	...	...	2	...	...	...
Cobborah.....	5,340	...	...	5	1	6	...	...	...	...	...	...	3	2	...	...	...
Cockburn.....	3,810	2	...	5	...	4	...	...	...	...	...	...	...	...	...	...	...
Colo	5,170	...	...	...	...	4	3	...	...	...	...	...	...	...	...	...	...
Conargo	1,030	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Coolah	1,710	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
Coolamon	7,380	1	...	21	1	2	...	1	1	...	...	...	1	1	1	1	...
Coonabarabran ...	5,940	...	...	17	...	4	1	...	...	...	...	...	1	4	...	...	...
Copmanhurst	3,110	1	...	5	...	5	1	...	...	...	...	...	...	1	...	...	...
Coreen	3,190	...	...	1	...	11	1	...	...	...	...	...	1	2	...	...	...
Crookwell	5,870	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Cudgegong	4,950	...	...	5	...	3	...	...	...	...	...	...	2	...	...	...	...
Culcairn	5,309	1	...	6	...	8	...	...	...	...	...	...	1	1	1	1	...
Dalgety	3,480	...	...	4	...	6	2	...	...	...	...	...	...	...	...	...	...
Demondrille	3,240	1	...	3	...	3	...	1	...	...	...	...	1	3	...	...	...
Dorrigo	8,200	...	...	...	...	40	3	1	...	...	...	...	4	3	...	...	...
Dumaresq	4,530	1	...	...	...	14	2	...	...	...	...	...	...	3	...	...	...
Eriua	16,110	3	1	9	1	24	2	...	...	1	...	...	4	3	2	1	...
Eurobodalla	4,650	...	...	1	...	1	...	...	...	...	...	...	3	4	...	...	...
Gilgandra	4,880	...	...	5	...	22	...	...	...	...	...	...	4	2	...	...	...
Gloucester	3,780	...	...	...	...	11	1	...	...	...	...	...	1	2	1	...	...
Goobang	5,880	2	1	4	...	6	...	...	...	...	...	...	2	2	...	...	...
Goodradigbee ...	3,020	...	...	3	...	1	...	...	...	...	1	...	...	...	...	...	...
Gostwyck	4,180	1	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...
Gundagai.....	4,980	...	...	3	...	1	1	...	...	...	...	...	2	1	...	...	...
Gundurimba	3,940	...	...	1	...	22	...	...	...	...	...	...	...	...	...	...	...
Gunning	3,350	...	...	1	...	3	...	...	...	...	...	1	1	...	...	...	...
Guyra	6,670	...	...	11	...	4	...	...	...	...	...	...	...	...	...	...	...
Gwydir	1,060	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Harwood	4,970	...	...	3	...	17	...	...	...	...	...	...	...	...	...	...	...
Hastings	7,680	...	...	1	1	...	...	...	...	2	1	...	3	3	...	...	...
Holbrook	2,170	1	...	1	...	...	...	...	...	...	...	...	2	2	...	...	...
Hume	4,600	...	...	1	1	22	...	...	...	...	...	...	...	...	...	...	...
Illabo	2,830	...	...	3	1	2	...	...	...	...	...	...	1	...	...	...	...
Imlay	4,500	...	...	1	...	3	2	...	...	...	...	...	1	5	1	...	...
Jemalong.....	3,430	...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...
Jerilderie	1,540	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Jindalee	1,980	...	...	3	...	3	...	...	...	...	...	...	...	...	...	...	...
Kyeamba	4,230	...	...	4	...	5	...	...	...	...	...	...	...	...	...	...	...
Kyogle	8,910	...	...	4	...	55	1	...	...	...	...	2	1	...	...	...	...
Laehlan	5,210	2	...	17	1	1	...	...	...	...	...	...	3	...	...	...	...
Liverpool Plains...	5,110	4	...	3	...	7	...	...	...	...	...	...	...	2	...	...	...
Lockhart	5,970	...	...	21	...	3	...	...	...	...	...	...	...	...	...	...	...
Lyndhurst	5,120	...	...	1	...	3	1	...	...	...	...	...	...	1	...	...	...
McIntyre	1,990	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Macleay	7,360	...	...	...	...	7	...	...	...	...	...	...	2	...	...	...	...
Macquarie	3,830	...	...	1	...	...	...	...	...	...	...	...	2	2	...	...	...
Mandowa.....	2,460	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Manning	13,230	...	...	5	...	18	...	...	...	...	...	...	1	1	1	1	...
Marthaguy	1,820	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Merriwa	2,440	...	...	...	...	6	1	...	...	...	...	...	...	1	...	...	...
Mitchell	4,410	...	...	9	...	2	...	...	...	...	...	...	2	1	...	...	...
Monaro	2,700	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Mulwaree.....	7,770	2	...	5	...	15	1	...	...	...	...	...	1	5	...	...	...
Mumbulla	4,120	...	...	4	...	3	...	...	...	...	...	...	2	3	...	...	...
Murray	2,520	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murrumbidgeo ...	650	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Murrungal	2,250	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...

REMAINDER OF STATE.—Return showing the number of Cases, &c., from Country Shires—*continued.*

Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
SHIRES—continued.																	
Muswellbrook ...	3,310	...	...	2	...	6	...	...	...	...	...	...	...	...	...	...	...
Nambucca	6,630	...	1	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Namoi	6,680	2	1	1	...	8	...	...	...	...	...	...	3	2	...	...	...
Narraburra	4,740	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nattai	3,980	1	...	1	...	7	...	...	...	...	...	...	1	1	1	...	...
Nepean	2,620	...	...	1	...	2	...	...	...	...	...	...	...	1	...	...	...
Nundle	1,140	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Nymboida	2,180	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Oberon	2,550	...	...	18	...	1	...	...	...	...	...	...	...	1	...	...	...
Orara	1,610	...	...	5	...	5	...	...	...	...	...	...	...	...	...	...	...
Patrick's Plains ...	6,150	...	...	...	...	3	...	...	...	...	...	...	3	...	...	...	...
Peel	6,760	2	1	10	...	2	...	...	...	1	...	...	2	1	...	...	...
Rylstone	4,550	1	...	6	...	2	1	...	...	...	...	...	1	...	1	1	1
Severn	5,490	...	...	...	...	6	...	...	...	...	...	...	1	...	1	...	...
Stroud	5,440	1	...	5	...	11	1	...	...	...	...	...	...	...	...	...	...
Sutherland	12,500	...	...	20	...	8	2	...	...	1	...	...	39	4	...	...	...
Talbragar	3,550	1	...	...	...	12	2	...	...	...	...	...	1	...	...	...	...
Talaganda	2,210	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Tamarang	2,690	1	...	5	1	...	...	...	...	...	...	...	1	...	...	...	...
Tenterfield	4,700	...	...	...	...	6	...	1	...	...	...	...	...	1	...	...	...
Terania	6,600	...	...	8	...	14	...	...	...	...	...	...	...	...	...	...	...
Timbreebongie ...	4,020	...	...	2	...	20	1	...	...	...	...	...	1	2	...	...	...
Tintenbar	5,790	...	...	4	...	17	...	...	...	...	...	...	1	1	...	...	...
Tomki	3,930	...	...	1	...	8	...	...	...	...	...	...	...	...	...	...	...
Tumbarumba ...	2,270	...	...	1	...	5	2	...	...	...	...	...	1	...	...	...	...
Tumut	8,340	1	...	8	...	23	2	...	...	...	...	...	2	3	...	...	...
Turon	3,050	...	...	8	...	7	...	...	...	...	...	...	...	...	...	...	...
Tweed	10,490	1	...	2	...	31	3	1	...	...	...	...	...	1	...	...	...
Upper Hunter ...	4,710	...	...	2	...	22	1	...	...	...	...	...	...	1	...	...	1
Urana	2,720	...	...	6	...	4	...	...	...	1	...	...	...	...	...	...	...
Wade	5,970	...	...	23	...	40	2	...	...	...	...	...	9	2	...	...	...
Wakool	3,330	5	2	3	...	...	...	...	...	...	...	...	3	1	...	...	...
Walgett	3,120	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	1
Wallarobba	5,269	...	1	2	...	...	1	...	...	...	...	...	1	1	...	...	...
Waradgery	780	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warrah	1,980	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...
Waugoola	5,750	1	...	5	...	5	...	...	...	...	...	...	5	4	...	...	...
Weddin	3,330	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Willimbong	7,200	2	...	40	...	2	...	...	...	...	...	...	4	2	1	...	...
Windouran	840	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wingadee	3,270	...	...	5	...	6	3	...	...	...	...	...	...	1	...	...	...
Wingecarribee ...	4,350	...	...	...	1	9	1	1	...	...	...	...	2	...	...	...	1
Wollondilly	5,110	...	...	1	...	7	1	...	...	...	...	...	7	1	...	...	...
Woodburn	2,850	...	...	1	...	8	2	...	...	...	...	...	...	...	...	...	...
Woy Woy	3,040	...	...	...	...	1	...	...	...	...	...	...	2	1	...	...	...
Wyaldra	2,080	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Yallaroí	3,050	...	...	5	...	2	...	...	...	...	...	...	...	...	...	...	...
Yanko	4,980	1	...	3	...	3	...	...	...	...	...	...	...	1	1	...	...
Yarrowkumbia	2,290	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
Total, Shires..	592,420	53	9	610	13	834	57	8	1	8	2	4	2	207	165	28	12

COUNTRY POLICE DISTRICTS.

Western Division (Unincorporated)	14,495	...	1	...	...	...	2	...	1	...	...	...	...	4	...	2
Balranald .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Bourke .....	...	...	...	1	...	4	...	...	...	...	...	...	...	...	...	...
Brewarrina .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Broken Hill .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cobar .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hay .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hillston .....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Menindie .....	...	6	...	...	...	5	...	...	...	...	...	...	2	...	...	...
Mitchell .....	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Nyngan .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Walgett .....	...	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Wentworth .....	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...
Wilcannia .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	14,495	13	1	5	...	10	2	1	1	...	...	...	...	2	4	2
Lord Howe Island..	120	...	...	*	...	...	...	...	...	...	...	...	...	...	...	...
Outside the State—																
Queensland ...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Victoria .....	...	...	...	4	...	23	...	...	...	...	...	...	...	...	...	...
South Australia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total .....	...	1	...	4	...	24	...	...	...	...	...	...	...	...	...	...

* 17 cases and 1 death—see report, page 45.

TABLE IV.—Table showing Age and Sex Incidence, and Mortality, in the Metropolitan Combined District, Hunter River Combined District, Broken Hill District, and Remainder of State, from the notified cases of Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Group, Infantile Paralysis (Acute Anterior Poliomyelitis), Encephalitis Lethargica, Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection, for the year ended 31st December, 1930.

[illegible]

METROPOLITAN COMBINED DISTRICT.

[illegible]

HUNTER RIVER COMBINED DISTRICT.

[illegible]

BROKEN HILL DISTRICT.

[illegible]

TABLE IV.—Table showing Age and Sex Incidence, and Mortality, in Remainder of State—*continued*.

Age Period.	Typhoid and Paratyphoid.			Scarlet Fever.			Diphtheria.			Encephalitis Lethargica.			Infantile Paralysis.			Cerebro-spinal Meningitis.			Pulmonary Tuberculosis.			Puerpera. Infection.																											
	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.																									
	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.																									
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.																									
All ages.....	78	65	143	16	6	22	430	744	1,174	9	8	17	816	880	1,696	42	42	84	3	3	6	2	3	5	3	8	11	1	1	2	239	159	398	174	136	310	...	61	64	...	33	33							
Under 1 year	7	3	10	16	13	29	2	4	6			
1-4.....	1	5	6	140	160	300	3	3	6	322	292	614	27	23	50	1	1	2		
5-14.....	22	22	44	2	1	3	201	403	604	5	3	8	377	384	761	11	14	25		
15-24.....	25	19	44	6	2	8	39	84	123	53	84	137	1	1	2		
25-34.....	9	12	21	22	69	91	32	56	88	1	...	1		
35-44.....	8	2	10	3	9	18	27	1	9	33	42		
45-54.....	7	1	8	2	1	3	3	1	4	3	9	12	
55-64.....	5	2	7	3	1	2	
65 and over	...	1	1	...	1	1	
Not stated...	1	1	2	9	6	15	4	8	12

REMAINDER OF STATE.

SUMMARY.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerpera Infection.	
	Cases.		Cases.		Cases.		Cases.		Cases.		Cases.		Cases.		Cases.	
	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.	Deaths.
Metropolitan Combined Sanitary District ...	116	14	2,972	35	1,907	82	15	4	9	12	5	12	624	195	46	
Inner River Combined District	26	5	235	2	411	7	...	...	1	3	3	...	61	10	3	
Broken Hill District	95	7	19	...	37	3	...	...	...	...	...	...	27	...	...
Remainder of State—																
Municipalities	77	12	529	4	852	25	2	...	...	2	...	4	141	34	19	
Shires	53	9	640	13	834	57	8	...	...	4	...	2	165	28	12	
Police Districts	13	1	5	...	10	2	1	...	...	...	...	...	4	2	2	
Total	380	48	4,400	54	4,051	176	30	6	12	43	14	20	1,917	269	82	

TABLE V.—Showing the seasonal prevalence of Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Encephalitis Lethargica, Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection in New South Wales for the year ended 31st December, 1930.

Month, 1930.	Typhoid Fever and Paratyphoid.										Scarlet Fever.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	19	1	7	1	27	1	13	1	66	4	267	1	24	...	...	...	112	...	403	1
February	22	2	1	1	10	1	25	4	58	8	198	5	17	...	1	...	73	1	289	6
March	17	1	1	...	16	2	27	3	61	6	225	1	15	...	5	...	133	...	378	1
April	9	1	6	1	5	...	16	4	36	6	267	1	21	1	1	...	129	...	418	2
May	6	...	1	...	9	2	13	3	29	5	222	2	22	...	2	...	93	3	339	5
June	3	...	1	...	4	1	11	2	19	3	263	3	20	1	1	...	77	...	361	4
July	7	...	...	...	5	...	3	...	15	...	288	5	26	...	2	...	92	3	408	8
August	9	3	...	...	2	...	1	...	12	3	292	4	18	...	1	...	58	3	369	7
September.....	9	...	3	1	5	...	7	2	24	3	260	4	20	...	2	...	74	3	356	7
October	2	1	...	...	2	...	5	...	9	1	231	3	23	...	2	...	107	1	363	4
November ...	3	1	5	...	4	...	7	1	19	2	242	3	15	...	1	...	95	2	353	5
December	10	4	1	1	6	...	15	2	32	7	217	3	14	...	1	...	131	1	363	4
Total	116	14	26	5	95	7	143	22	380	48	2,972	35	235	2	19	...	1,174	17	4,400	54

Month, 1930.	Diphtheria.										Encephalitis Lethargica.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	169	6	24	1	...	...	113	9	306	16	1	...	...	1	...	...	1	...	2	1
February	158	9	43	1	1	...	111	6	313	16	...	3	1	...	...	...	...	1	1	4
March	190	7	52	1	...	...	167	10	409	18	1	...	...	...	...	...	...	1	...	...
April	227	7	66	1	...	...	251	13	544	21	1	...	...	...	1	...	...	1	1	1
May	226	5	44	...	5	...	196	10	471	15	...	1	...	...	...	...	2	...	2	1
June	169	10	24	...	3	1	144	7	340	18	...	...	...	...	...	...	...	1	...	1
July	176	5	31	2	11	...	150	6	368	13	...	1	...	...	...	...	...	...	...	1
August	173	9	29	...	5	2	99	9	306	20	1	1	1	...	...	...	...	2	1	1
September.....	128	4	24	...	4	...	103	3	259	7	1	3	1	1	...	...	2	1	4	5
October	107	7	16	1	5	...	98	3	226	11	...	2	...	...	...	...	...	...	...	2
November ...	76	3	13	...	2	...	94	2	185	5	...	...	...	...	...	...	...	1	...	1
December	108	10	45	...	1	...	170	6	324	16	...	1	...	...	...	...	1	1	1	2
Total	1,907	82	411	7	37	3	1,696	84	4,051	176	5	12	3	2	...	1	6	5	14	20

Month, 1930.	Infantile Paralysis.										Cerebro-spinal Meningitis.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January	1	...	...	...	...	...	3	1	4	1	...	1	...	...	...	...	1	...	1	1
February	3	...	...	...	...	...	1	...	4	1	3	...	...	...	...	...	1	...	4	...
March	2	1	...	...	...	...	...	...	2	...	2	1	...	...	...	...	1	...	3	1
April	3	...	...	...	...	...	1	...	4	2	3	1	...	...	...	...	...	3	1	1
May	2	2	...	...	...	...	...	...	2	...	6	...	...	...	...	...	1	...	7	...
June	1	...	...	...	...	...	...	...	1	...	3	1	...	...	...	...	...	1	3	2
July .....	...	...	...	...	...	...	1	...	1	...	2	1	2	1	...	...	5	...	9	2
August .....	...	...	...	...	...	...	3	...	3	...	...	...	...	...	...	...	2	1	2	1
September ...	1	...	...	...	...	...	1	1	2	2	4	2	1	...	...	...	...	...	5	2
October	1	1	...	...	...	...	1	...	2	...	1	...	...	...	...	...	1	...	2	...
November ...	...	...	...	...	4	...	...	...	4	...	2	2	...	...	...	...	1	...	3	2
December	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
Total	15	4	...	...	4	...	11	2	30	6	26	9	3	1	...	...	14	2	43	12

Month, 1930.	Pulmonary Tuberculosis.										Puerperal Infection.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	119	63	4	8	...	2	27	43	150	116	5	5	1	...	...	...	2	1	8	6
February	103	43	5	3	10	5	30	26	148	77	11	2	...	...	...	...	9	3	20	5
March	86	41	10	9	1	2	29	12	126	64	15	2	...	...	...	...	5	2	20	4
April	73	45	11	1	1	...	16	19	101	65	7	5	...	...	...	...	10	5	17	10
May	103	66	16	7	97	2	37	24	253	99	6	...	1	1	...	...	2	1	9	2
June	86	46	8	6	29	1	24	25	147	78	18	3	2	...	...	...	2	4	22	7
July	108	47	6	8	2	5	35	23	151	83	25	4	2	...	...	...	4	3	31	7
August	90	59	5	4	1	2	33	23	129	88	26	3	...	...	...	...	9	3	35	6
September.....	120	42	7	5	1	4	36	32	164	83	24	7	1	1	...	...	7	3	32	11
October	166	57	10	3	1	2	58	27	235	89	29	7	1	...	...	...	7	4	37	11
November ...	103	60	11	6	4	2	22	27	145	95	9	1	2	...	...	...	5	1	16	2
December ...	103	55	5	1	9	...	51	29	168	85	20	7	...	1	...	...	2	3	22	11
Total	1,265	624	98	61	156	27	398	310	1,917	1,022	195	46	10	3	...	...	64	33	269	82

TABLE VI.—Showing the number of cases of Infectious Diseases notified in the State of New South Wales during the years 1898 to 1930, inclusive, and the number of deaths therefrom.

Year.	Population.	Typhoid Fever.*		Scarlet Fever.*		Diphtheria.*		Plague.†		Infantile Paralysis.‡		Cerebro-spinal Meningitis.§		Encephalitis Lethargica.||		Pulmonary Tuberculosis.¶		Puerperal Infection.**	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1898	1,323,130	3,302	387	6,342	83	1,493	169	...	...	...	...	...	...	...	...	...	...	...	...
1899	1,344,080	2,783	347	1,389	25	741	60	...	...	...	...	...	...	...	...	...	...	...	...
1900	1,364,590	3,412	398	895	9	726	63	303	103	...	...	...	...	...	...	...	...	...	...
1901	1,376,199	2,702	291	1,288	16	922	131	...	...	...	...	...	...	...	...	...	...	...	...
1902	1,397,858	2,624	276	2,010	61	757	74	140	41	...	...	...	...	...	...	...	...	...	...
1903	1,416,879	4,855	475	5,358	87	1,214	134	2	...	...	...	...	...	...	...	...	...	...	...
1904	1,440,919	2,370	249	4,056	50	1,584	156	12	6	...	...	...	...	...	...	146	...	...	...
1905	1,469,153	2,226	239	1,773	21	1,118	102	56	21	...	...	...	...	...	...	128	...	...	...
1906	1,498,609	2,373	271	3,085	42	1,219	100	20	8	...	...	...	...	...	...	118	...	...	...
1907	1,531,980	1,972	189	2,570	26	1,376	133	51	20	...	...	...	...	...	...	161	...	...	...
1908	1,560,026	2,607	307	2,755	40	2,001	123	6	3	...	...	...	...	...	...	112	...	...	...
1909	1,596,685	2,615	287	7,178	30	2,419	166	24	7	...	...	...	...	...	...	196	...	...	...
1910	1,638,220	2,714	294	1,642	23	4,989	207	...	...	...	...	...	...	...	...	184	...	...	...
1911	1,698,735	1,864	184	2,618	11	4,784	226	...	...	...	...	...	...	...	...	222	...	...	...
1912	1,778,962	2,126	236	662	11	5,440	253	...	...	...	...	...	...	...	...	265	...	...	...
1913	1,832,546	2,187	236	1,120	23	6,380	310	...	...	47	10	...	...	...	...	228	...	...	...
1914	1,862,028	2,284	250	3,207	21	5,831	247	...	...	79	14	...	...	...	...	293	...	...	...
1915	1,868,644	1,941	219	8,335	97	5,838	264	...	...	63	11	50	33	...	...	361	86	...	...
1916	1,846,736	1,742	209	5,759	107	6,588	309	...	...	311	21	309	145	...	...	1,499	666	...	...
1917	1,886,701	1,091	103	2,255	27	5,805	247	...	...	16	12	197	98	...	...	1,319	584	...	...
1918	1,928,174	810	112	1,308	15	5,151	221	...	...	50	12	120	80	...	...	1,308	586	...	...
1919	2,000,173	857	106	959	10	2,826	114	...	...	8	3	28	23	...	...	1,102	678	...	...
1920	2,099,763	1,016	132	937	24	5,043	263	...	...	45	10	34	27	...	...	1,509	674	...	...
1921	2,128,786	949	129	1,060	8	6,854	306	2	1	184	22	30	28	...	...	1,240	791	...	...
1922	2,174,688	706	99	1,153	11	4,094	207	33	9	33	5	21	22	...	...	1,045	517	...	...
1923	2,211,106	873	104	2,623	13	3,480	176	1	1	104	8	27	22	...	...	1,218	657	...	...
1924	2,256,649	768	97	3,421	29	4,364	222	...	...	108	6	29	38	...	...	1,096	730	...	...
1925	2,300,081	533	80	3,043	27	3,004	118	...	...	57	14	37	27	...	...	1,195	617	...	...
1926	2,349,401	698	80	4,755	53	3,579	147	...	...	81	21	32	23	...	...	1,265	705	...	...
1927	2,401,884	460	68	8,369	113	4,059	179	...	...	25	4	25	10	3	27	1,158	632	...	...
1928	2,446,874	453	60	5,531	105	3,835	168	...	...	30	2	31	8	18	23	1,212	815	...	...
1929	2,479,147	438	45	5,219	78	4,274	215	...	...	241	29	28	10	26	30	1,215	1,152	44	79
1930	2,502,030	380	48	4,400	54	4,051	176	...	...	30	6	43	12	14	20	1,917	1,022	269	82

* Notifiable from 1st January, 1898.
† " 23rd January, 1900.
‡ " 1st February, 1912.
§ " 1st April, 1926.
|| " 11th October, 1915.
¶ 1904, city of Sydney only; from 1915, Metropolitan, Hunter River Districts; [from 1916, Blue Mountain Districts.
** Notification extended to whole State, March, 1929.
" 16 August, 1929.

Typhus Fever (Endemic) ; two cases were notified in 1930 (see page 47).

GRAPHS

Annual Death-rate per 100,000 and case rate per 10,000 of population—

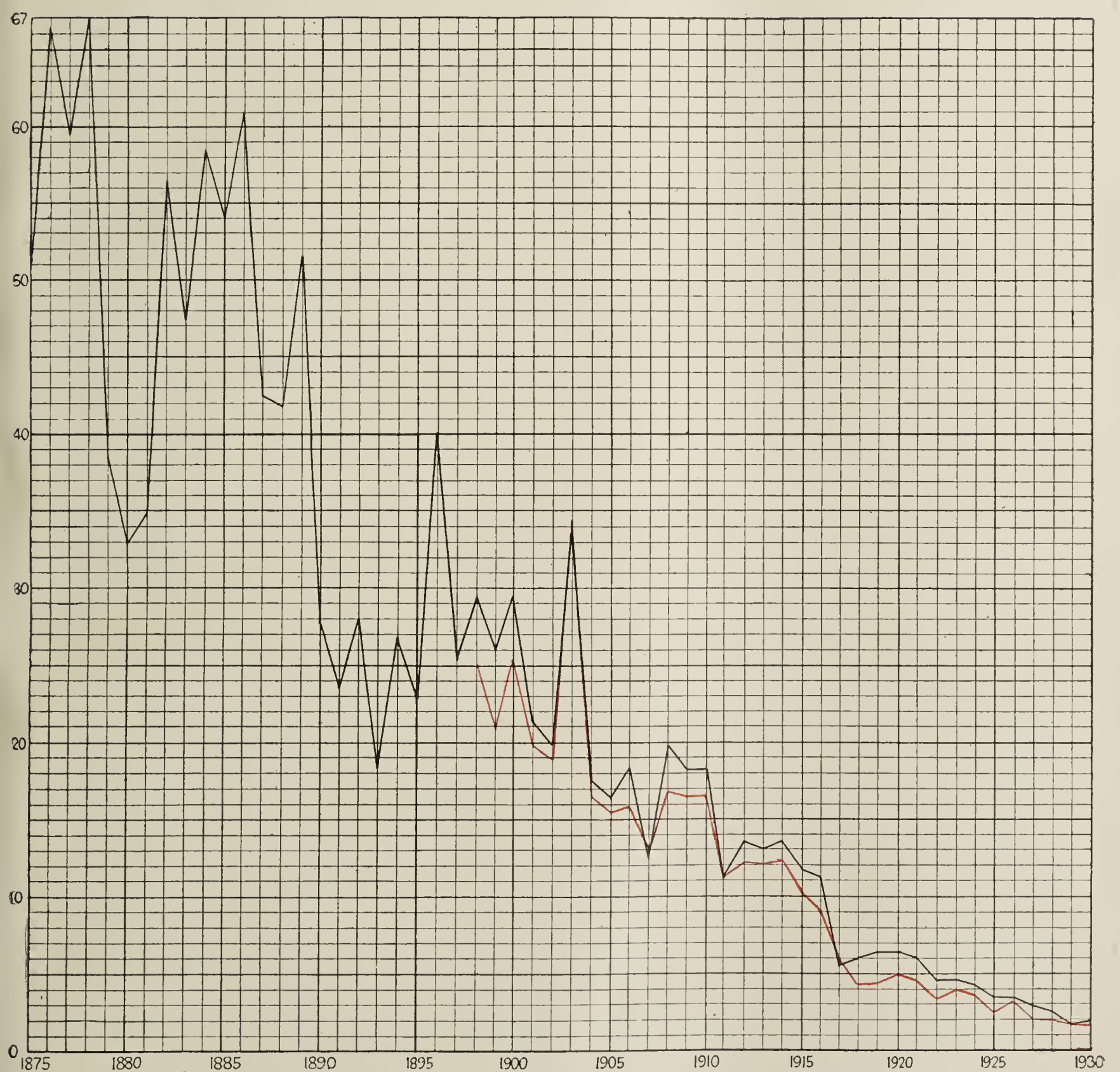
Typhoid Fever	} 1898-1930.
Scarlet Fever	...	...	...	...	...	...	...
Diphtheria...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...

Annual Death-rate per 100,000 of population in New South Wales ... 1875-1930 (page 11).

TYPHOID FEVER.

Annual Death Rate per 100,000 of the Population and Annual Case Rate per 10,000 in New South Wales, 1875-1930.

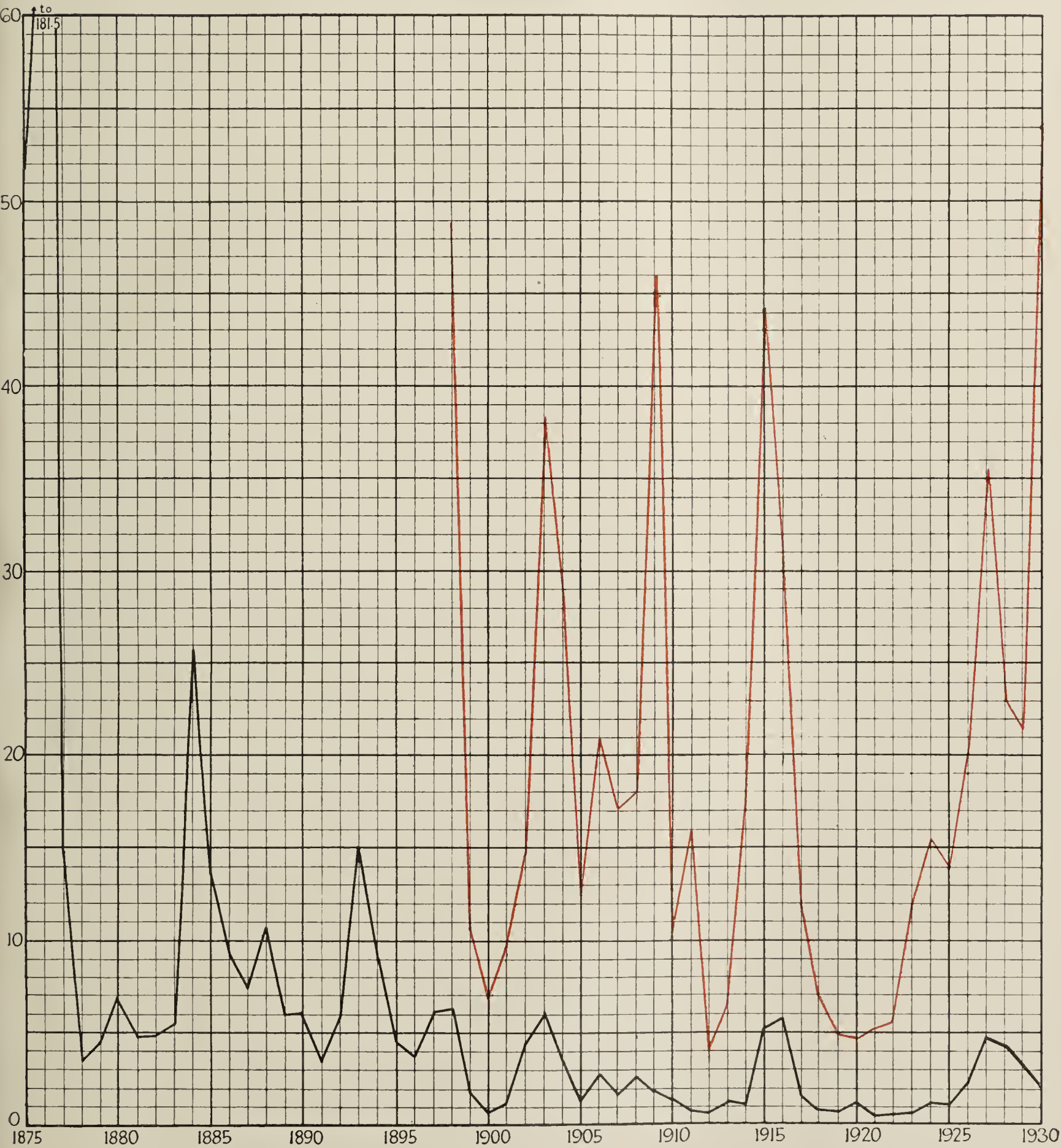
Black line—Death Rate. Red line—Case Rate.



SCARLET FEVER.

Annual Death Rate per 100,000 and Case Rate per 10,000 of Population in New South Wales, 1875-1930.

Black—Deaths per 100,000 of mean population.
Red—Cases per 10,000 of mean population.



DIPHTHERIA.

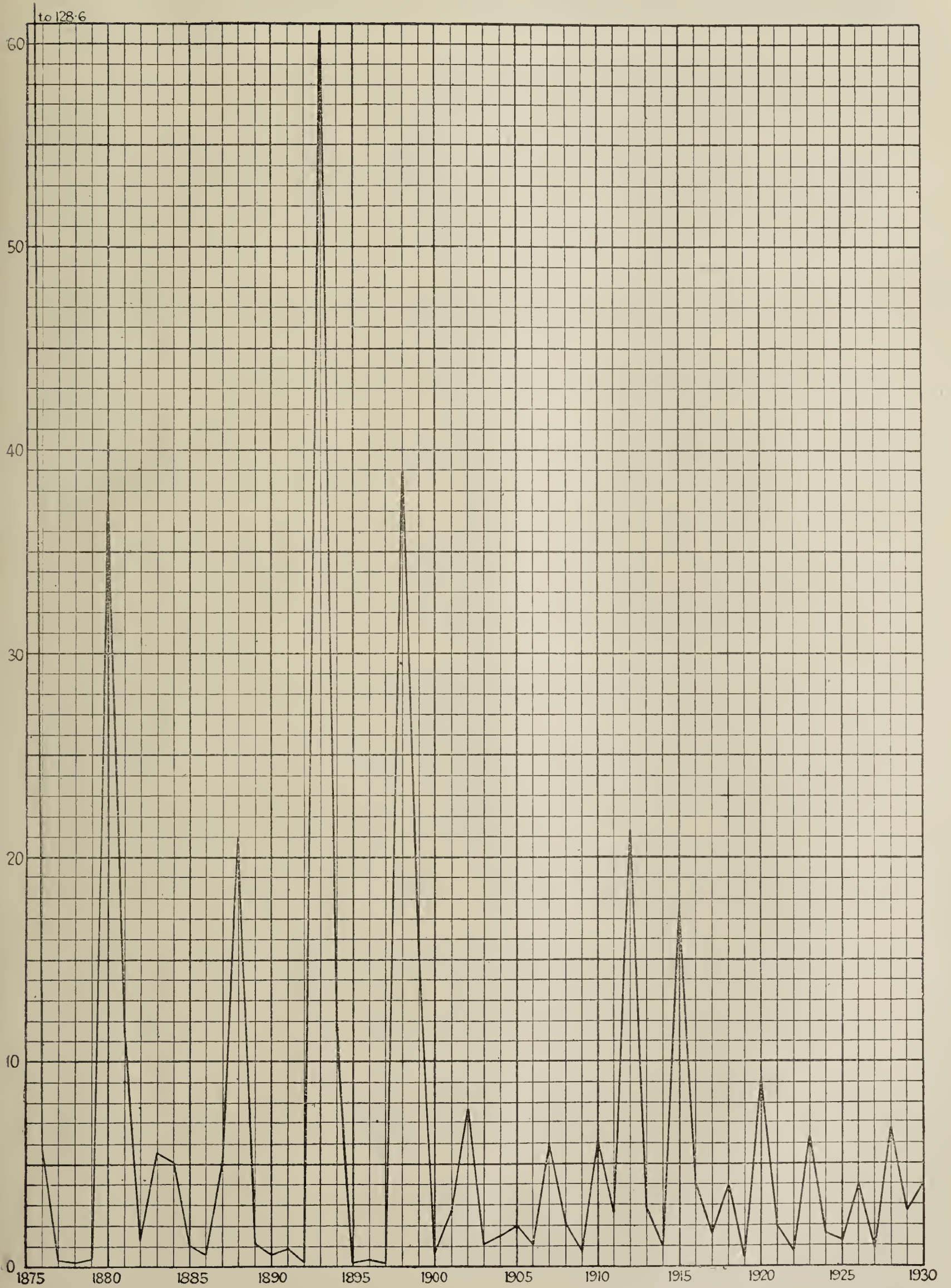
Annual Death Rate per 100,000 of the Population and Annual Case Rate per 10,000 in New South Wales, 1875-1930.

Black line—Death Rate. Red Line—Case Rate.



MEASLES.

Annual Death Rate per 100,000 of Population in New South Wales, 1875-1930.



2.—SCARLET FEVER, LORD HOWE ISLAND.

RESUME OF DATA COLLECTED BY AN OFFICER OF THE SANITARY INSPECTION STAFF DURING THE INVESTIGATION OF A SCARLET FEVER OUTBREAK ON LORD HOWE ISLAND, 1929-1930.

Lord Howe Island—a dependency of the State of New South Wales—is situated in the South Pacific Ocean 31° 30' S. latitude and 159° 5' E. longitude, approximately 450 miles E.N.E. from Sydney.

The island is managed by a Board known as the Lord Howe Island Board of Control with headquarters in Sydney; this Board is responsible to the State Chief Secretary.

On the island there is a Local Committee consisting of a Chairman, appointed by the Board of Control, and two members elected by the residents for a period of two years. The duties of the Committee are to carry out the directions of the Board and keep the Board advised of any matters requiring attention.

The island, boomerang shaped, is approximately 7 miles long and has a varying width of from about $\frac{1}{4}$ to $1\frac{3}{4}$ miles. The southern and south-eastern parts of the island are very mountainous with peaks running up to a height of 2,800 feet, and the shore line consists of rugged cliffs which prevent access from the sea.

The more level portion of the island towards the north is made up of blown coral formation, sand, and loam largely impregnated with humus overlying a deep bed of yellow clay. It is in this area where settlement is found and where crops are raised by the inhabitants.

Origin of Islanders.—According to records available a party consisting of three white seamen and some Maori women and Maori boys reached the island in 1833-1834 and formed the first settlement. Some of the descendants of these pioneers still reside on the island, the present population of which is 120 (whites and coloured).

Industries.—The chief industry is the exportation of *Kentia* palm seeds and small palms. There are four varieties of these palms, viz., *Kentia Forsteriana* (thatch palm), *Kentia Belmoreana* (curly palm), *Kentia Canterburyana* (large mountain or umbrella palm), and the small mountain palm known as *Kentia Moorei*.

The thatch palm is confined chiefly to the beach, not being found further up the mountains than at an elevation of from 300 to 400 feet, whereas the curly palm extends from sea-level to an elevation of about 1,200 feet on the sides of Mounts Gower and Lidgbird.

The leaves of the thatch palm were formerly used by the residents for thatching their dwellings and its stems and those of the curly palm were generally used for the framework of buildings.

The umbrella palm is met at an elevation of about 1,000 feet, and occurs in patches from this height to the tops of the mountains.

The palm industry, which is a financially sound business, is managed by the Board of Control. The islanders have proportionate shares in the industry. Dividends are paid monthly and are apportioned on a basis which will give each islander a comfortable living.

Buildings.—There are about 40 buildings on the island, including dwellings and business premises. These buildings are, in the main, constructed of weatherboard, while a few are of fibrolite or corrugated iron.

Tourist Accommodation.—As the island is gradually becoming a favourite resort for tourists from New South Wales and other Australian States several guest houses have been established to provide the necessary accommodation. There is no hotel on the island.

Water Supply.—Rain water collected off roofs and stored in corrugated iron overhead tanks and in underground concrete tanks constitutes the water supply for drinking and domestic purposes.

On a number of premises wells of varying depths, from 15 to 60 feet, are provided, but the contents of these wells are rarely used for domestic purposes.

Closet Accommodation.—Cesspits form the most common type of closet accommodation. Closet superstructures are of iron and wood. The closets are maintained in a reasonably clean condition, but the non-flyproof seats and condition of several pits left much to be desired.

Garbage Disposal.—Each householder is responsible for the disposal of his household refuse. This is satisfactorily dealt with on many premises by burning or burial, but in a number of instances conditions were unsatisfactory.

Measles.—It is said that prior to the outbreak of scarlet fever in 1929-30 the only other infectious disease known to have invaded the island was measles. In 1868 some of the Pitcairn Islanders visited Sydney in the schooner "Pacific" and unfortunately contracted measles, which made its appearance amongst them during the return journey and obliged them to call in at Lord Howe Island, where the disease broke out after their departure.

Scarlet Fever (1929-1930).—The first known case was that of a female aged 13 years, a daughter of the occupier of one of the accommodation houses on the island. Some other members of this household had been ill suffering from sore throats, but the nature of the disease had not been recognised. A medical practitioner who was on a visit to the island with a tourist party was asked to examine some of the sick and found them suffering from scarlet fever. There were seventeen known cases, one of which, a male aged 15, proved fatal. It would appear that the infection had been imported to the island from the mainland through tourist or other traffic.

In connection with this outbreak of scarlet fever the Board of Control on the advice of this Department promptly forwarded various necessary medical requisites, including antitoxic serum. Informative pamphlets on the disease were distributed amongst the residents and the disinfection of invaded premises was carried out. The resident nurse on the island rendered very effective services during the epidemic.

Medical and Nursing Services.—There is no medical practitioner resident on the island. The present school master's wife, who is a fully qualified general and obstetric nurse, receives an allowance from the Board of Control, and, in return, gives any necessary nursing attention required by the residents. Medical stores and other requisites are furnished by the Board of Control from Sydney, and these are made available to the islanders at a minimum charge.

The services of any medical practitioner who happens to be on a visit to the island are not infrequently availed of by the islanders. The advice of any such practitioner is welcomed by the Board of Control in regard to any medical matters requiring attention.

So far as is known rats were unknown on the island until about 1918. Following the stranding of a vessel on the island in that year it would appear that some of the rats on the ship made their way to the island and there rapidly increased in numbers. Owing to the great damage to the palm industry caused by these rodents the Board of Control was obliged to take active steps to exterminate them, and various measures have been adopted with this object in view, e.g., poison baits, trapping, the use of owls, &c. A bonus of sixpence per rat tail is also paid by the Board and in this way an average of about 1,500 rats have been accounted for during each of the past four years.

3.—SOME NOTES ON MEASLES AMONGST SCARLET FEVER CASES IN THE COAST HOSPITAL DURING THE PERIOD 1st APRIL, 1930, TILL 31st JANUARY, 1931.

(Dr. F. H. H. WILSON.)

In 1930 there was an extensive outbreak of measles amongst scarlet fever cases in the Coast Hospital. This occurred in spite of very great care in the isolation of all contacts and suspects, and was due to the extreme infectivity and long incubation period (16–24 days), and the great susceptibility of small children to measles.

The following figures will show the incidence and mortality of the disease when it followed scarlet fever :—

Age Period.	Total Scarlet Fever Cases. (including Measles).	Deaths.	Measles following Scarlet Fever.	Deaths due to Measles.
0—5 years	294	20	87	9
5—10 „	384	2	38	1
10—15 „	148	...	2	...

Thus, in the age period 0–5 years secondary measles infection was responsible for almost half the deaths.

Besides this mortality there is also a considerable morbidity and greatly increased stay in hospital. Last, but not least, there is a weakening of the public confidence in the hospital, and much worry and anxiety for the medical and nursing staffs.

There are three possible methods of dealing with such a complication of scarlet fever.

1. Isolation.

This has been found unsatisfactory in spite of early diagnosis, often the day before the appearance of Koplik's Spots.

2. Human convalescent serum.

3. Pyramidon.

Serum.—Most observers are now in agreement that serum in doses of about 1 c.c. for each year, if given before the sixth day of incubation, will prevent the attack; from the sixth till the ninth day, will mitigate it; and after the ninth day will have no effect. For treatment after the rash has appeared the serum is of little or no value. Our experience agrees with this, but we have not had enough serum to give very large doses to patients showing Koplik's Spots.

Prophylaxis by serum has been increasingly used since 1916, the latest report I have seen is by Nabarro and Signy, of Great Ormond-street Hospital, London (B.M.J., 3rd January, 1931, p. 12), who claim that 93·3 per cent. of 586 children were protected.

This figure is approximately double that obtained here. The doses given were larger than we administered, but in our investigation the dosage was limited by the small amount of available convalescent serum.

The serum used was obtained from blood collected at the Coast Hospital from adult patients who were in the convalescent stage after measles. All donors gave negative Wassermann reactions. In each instance the blood was collected about seven days after the temperature had fallen to normal. Whole blood was sent to the departmental laboratory, where serum was separated and filtered through Seitz filters. No preservative was added. The serum was used only after repeated sterility tests had been made.

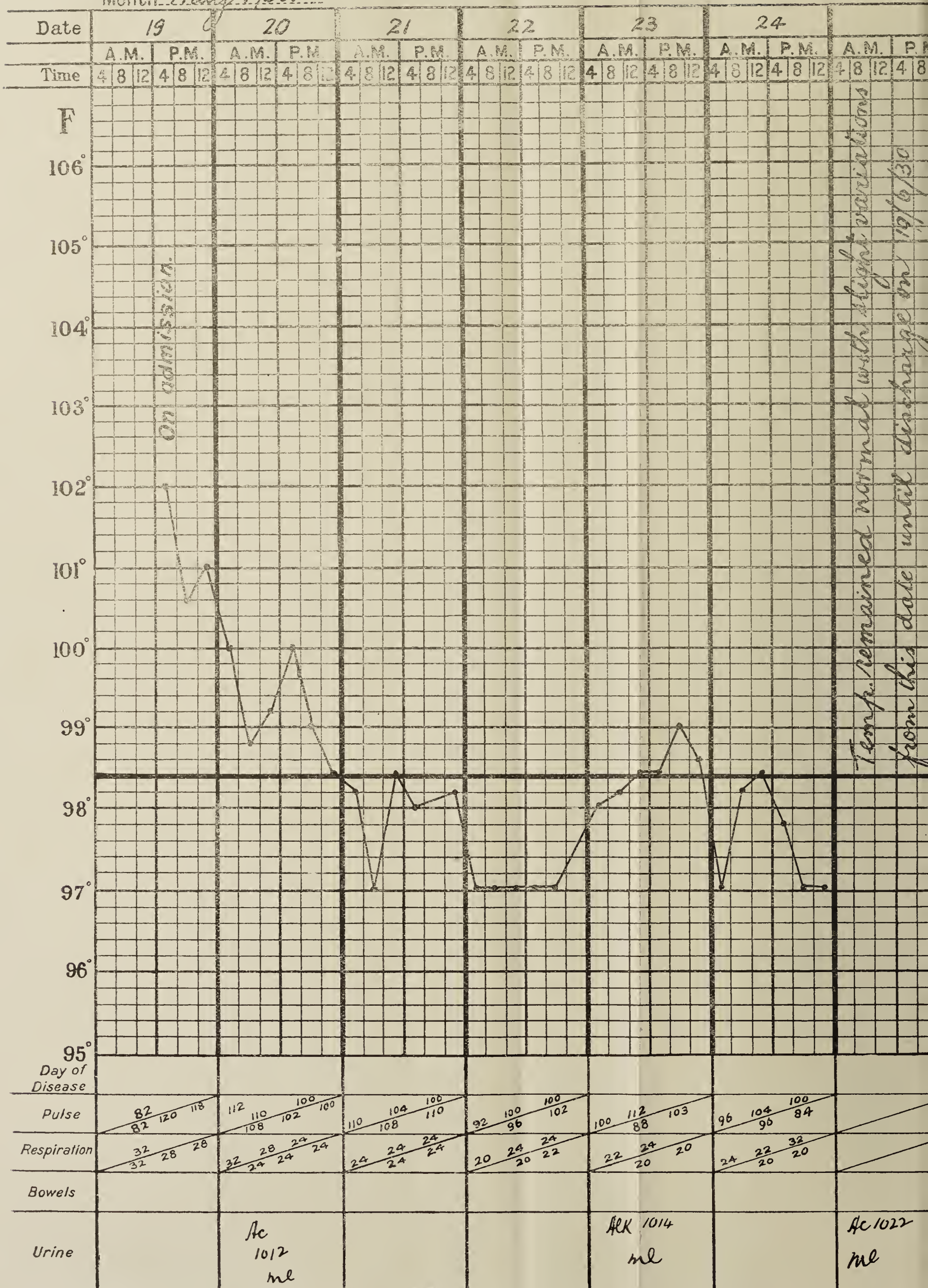
We gave the serum to one hundred scarlet fever patients who were either showing signs of incipient measles or were contacts.

Excluding (a) patients over the age of five years; (b) those who were not subsequently kept under observation for more than two weeks; and (c) those to whom serum was given one or two days before or on the appearance of Koplik's Spots;

Case 6

The Coast Hospital

Ward

Name E. E. L. Age 36 yrs.Month May 1930.

Twenty-five cases under five years received 5 c.c. of serum intramascularly. Sixteen of these (who were observed from 15–56 days, average 29 days) did not get measles.

Nine of these cases did get measles; in one the attack was mild; the rest were very mild; no deaths occurred. Six developed the rash 10–18 days after injection of serum; one 7 days after injection (probably the serum was given too late in the incubation period); and two 30–33 days. If a larger dose had been given the attack would probably have been prevented.

Pyramidon.—Very enthusiastic reports have been published in medical journals during 1930. Our experience was limited to 20 cases of measles following scarlet fever, and the results were very variable.

Conclusions.—The problem of this cross infection of scarlet fever with measles is a very important one in a large hospital and both serum and pyramidon treatments require further investigation. The result in a small series of cases shows the protective effect of convalescent measles serum in at least 60 per cent. of contacts, and indicates that where it failed to protect the severity of the infection was definitely reduced.

4. ABNORMAL CONDITIONS OF PUBLIC HEALTH INTEREST.

(DR. E. SYDNEY MORRIS.)

	PAGE.
(a) THE INCIDENCE OF ENDEMIC TYPHUS (BRILL'S DISEASE) IN NEW SOUTH WALES ...	47
(b) CASE OF IODIDE RASH SIMULATING SMALLPOX	51

(a) ENDEMIC TYPHUS FEVER (BRILL'S DISEASE).

During the past three years there have been seven cases of endemic typhus reported in this State. This incidence is very low compared with other States since, over a period of years, the number of cases reported has been as follows :—Victoria, 1; Queensland, 55; South Australia, 143; Western Australia, 93; Tasmania, nil.

The first case (1) reported in New South Wales occurred in 1927*, but no records are available regarding the symptoms or course of the disease, nor are there any details regarding verification of the disease by bacteriological examination.

The following four cases, whose histories are briefly summarised, occurred in 1928–29. They were all confined to the Northern Rivers district, centering on the towns of Lismore and Kyogle.

1928.—2. A.H., employee, Railway Construction Camp, 28 years of age. Ill for a week before admission to hospital. For one week after admission had drenching sweats and severe frontal headaches. Temperature, 102 to 103 degrees; persistent headaches and general malaise, with marked suffusion of the eyes. Epistaxis occurred twice. Generalised enlargement of all superficial glands, but no enlargement of spleen. The glandular enlargement disappeared with temperature, which did not reach normal until about the end of the third week. No rash was seen whilst under medical observation. Typhoid was suspected, but the Widal reaction was negative, though the Weil-Felix reaction was positive in a dilution of one in 320.

1929.—3. A.W., blacksmith's striker, 28 years of age. Place of work was next to produce store, where rats and mice were said to be very numerous. The symptoms were severe headache, general malaise, anorexia, diarrhoea. Temperature was between 102 and 103 degrees for six days, then fell suddenly to 98.6 degrees. Next day, the seventh of illness, the temperature was 103 degrees, with pain in left shoulder and wrist joints. On this day a maculo-papular rash with a few minute pustules on the whole of trunk was noted. The temperature remained between 102 and 103 degrees for the next five days, and then fell rapidly to normal, after which convalescence became established. The diagnosis was confirmed by bacteriological examination of the patient's serum, which gave a positive Weil-Felix reaction agglutinating bacillus *Proteus* X19 in a dilution of one in 1,280.

4. N.P., veterinary surgeon, 28 years of age. The disease was ushered in with a slight shivering attack. Showed the usual symptoms, but rash did not appear till the tenth day, and by the thirteenth day the temperature was normal. The rash disappeared, and convalescence commenced immediately the temperature became normal. The Weil-Felix reaction was positive, but in what dilution is not recorded.

5. Mrs. A.—No history was obtained in this case, beyond the fact that she was definitely diagnosed as a case of endemic typhus with a positive Weil-Felix reaction.

Until May, 1930, no other case had been reported in this State, but in that month the following case occurred in the Metropolitan district :—

6. E.E.C., motor mechanic, aged 36 years, residing and working at Mosman, became ill in the early part of May, 1930.

Previous History.—Patient was a returned soldier, who returned to Australia in 1917. He has travelled fairly extensively, and has spent some time in the Pacific Islands and South Africa. No history of any outstanding previous illness was ascertained.

Personal History.—His working hours involved his leaving home at 7.30 a.m., returning at about 10.30 p.m. He had been employed at the same garage for the past eighteen months, during which time his health had been quite normal.

Present Illness.—About the first week in May the patient felt off-colour, tired and languid. During this time he suffered from headaches, which necessitated the administration of Aspro tablets and other headache powders almost every day. On the 5th May he definitely appeared to be ill, complained of marked headache, and was requested by his wife to stay home. His appetite, however, was fairly good. He complained of tiredness and feeling of malaise from the 5th to the 9th May, inclusive. On the 9th May he arrived home at about 10 p.m., and stated that Dr. E. L. Newman had seen him at the garage, and had sent him home to bed with a diagnosis of influenza, for which Dr. Newman prescribed a mixture and powders. He complained of a dry mouth and aches and pains all over his body. There was tremor and a chilly feeling, but no definite rigor. Epistaxis occurred that night, and it was early noted that his eyes were very congested, but his face remained pale. Coryza was not present early in the disease, nor throughout the remaining course of his illness. On the 10th May he vomited for the first time, and this vomiting persisted for the whole of the following week whenever any food or drink was swallowed. His wife stated that he was very hot to the touch, as "though on fire" (temperature 104, and pulse rate 120). This condition persisted, with temperature ranging from 102 to 104 degrees, until admission to hospital. The headache was frontal in type, and this persisted throughout the time he was at home. Insomnia, which was very marked, was not relieved with soporifics. About the 13th May he became delirious, and remained in this condition, passing motions in bed, and persisting in getting in and out of bed. Prostration after about a week in bed became very marked. On the 13th May, i.e., the fifth day of his illness, a macular rash developed. This first appeared on the abdomen as isolated spots; within forty-eight hours the rash was thickly marked all over the body, but was most marked on the back and the extensor surface of limbs. There was no rash on the face, nor did

* Adey, Report of Federal Health Council of Australia, Appendix II, 4th Session, 1930.

the patient complain of sore throat, but at this time the symptoms became exacerbated and the patient complained of sore mouth. The tongue was very dry and thickly coated, except along the margin and in median line. A cough, which was at first dry, accentuated the headache, but later the cough was accompanied with expectoration. Examination of the lungs showed nothing abnormal. It was at this stage that Dr. Newman invited me to see the patient.

On examination, the diagnosis seemed to be between typhoid fever, complicated by measles, or measles of a very severe type producing a typhoid-like condition. The anomalous distribution of the rash, together with the lack of coryza, were definitely against measles. The intense headache, the high continued temperature, epistaxis, delirium, and the general condition of the patient were strongly suggestive of typhoid. This diagnosis was supported by the detection of a palpable spleen. The rash, both in its distribution and in character, was strongly opposed to this diagnosis, and endemic typhus seemed to be a possibility. In view of the obvious seriousness of the condition, I arranged for the patient's admission to the Coast Hospital. Within thirty-six hours of his admission to the Coast Hospital (i.e., on or about the twelfth day after the patient had taken to bed) the temperature became normal by fairly rapid lysis.

Widal test negative to typhoid and paratyphoid A. and B., but Weil-Felix test positive in a dilution of 1 in 960.

A further case came under notice in August, 1930, the history being as follows :—

7. Mrs. B.S., aged 55 years, wife of a solicitor in comfortable circumstances.

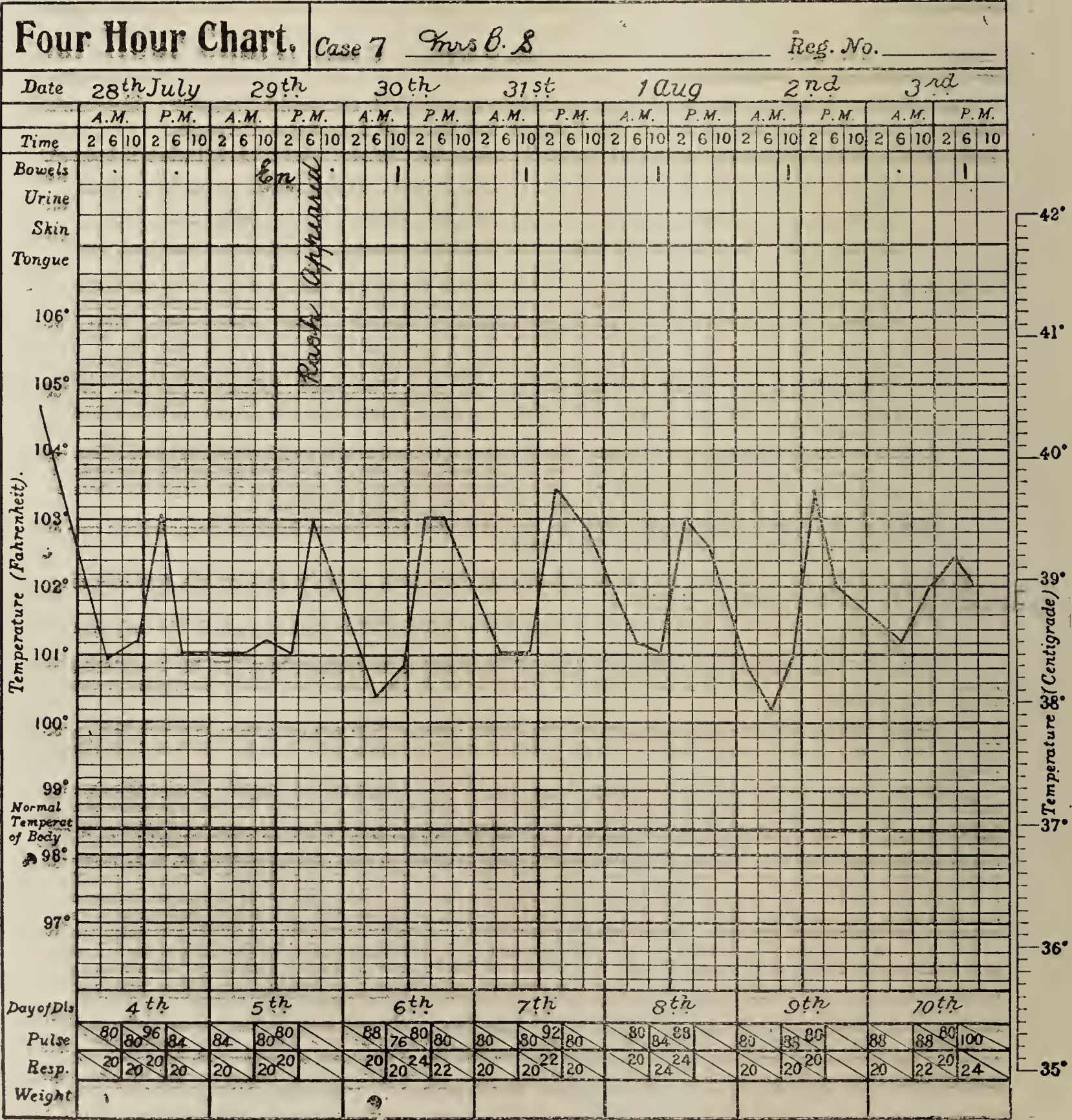
Personal History.—Measles when a child. Typhoid fever fifteen years previously. Has suffered from chronic cystitis and has undergone several surgical operations for pelvic trouble.

The premises in which Mrs. B.S. lived consisted of a modern, well appointed bungalow cottage situated about 100 yards from the premises in which E.E.C. (case No. 5) lived and somewhat less than ¼ mile from the garbage tip used by the Mosman Local Authority. Rats were stated to be prevalent, in spite of every effort to eradicate them, by trapping and other means. It was contended that the rats came from the garbage tip, which, in spite of satisfactory management was nevertheless rat-infested.

History of Present Illness.—On 24th July, 1930, patient felt dizzy and “out of sorts.” On 25th she felt tired with malaise, “hot flushes,” headache, and “cold shivers.” She was still ill on 26th, when her temperature was found to be 102 deg. in morning, 103 deg. in the afternoon, and 104 deg. at night, when Dr. Tange was called in. Anorexia was very marked, and though intense nausea was present, patient was unable to vomit.

Symptomatic treatment was adopted, but without obtaining any relief.

On 29th July, i.e., the fifth day of illness, a macular rash developed similar to that in the case of E.E.C. in character and distribution, though not quite so marked in intensity.



The tongue was coated, but was not brown or dry and the edges were clean. There was a dry irritating cough and the spleen was palpable. Constipation was also a marked feature. Patient complained severely of intense frontal headache which originated with the commencement of the illness and persisted throughout the period of pyrexia. Insomnia was very marked and could not be alleviated in spite of every form of palliative treatment.

The temperature continued until the 6th August, 1930, when it came down to normal by rapid lysis, accompanied by a drenching perspiration.

The patient's blood serum was submitted to the Widal and Weil-Felix reactions on 4th August, but was negative to both tests. A week later the reaction was positive to the Weil-Felix reaction in a dilution of 1/2500, but negative to the Widal test.

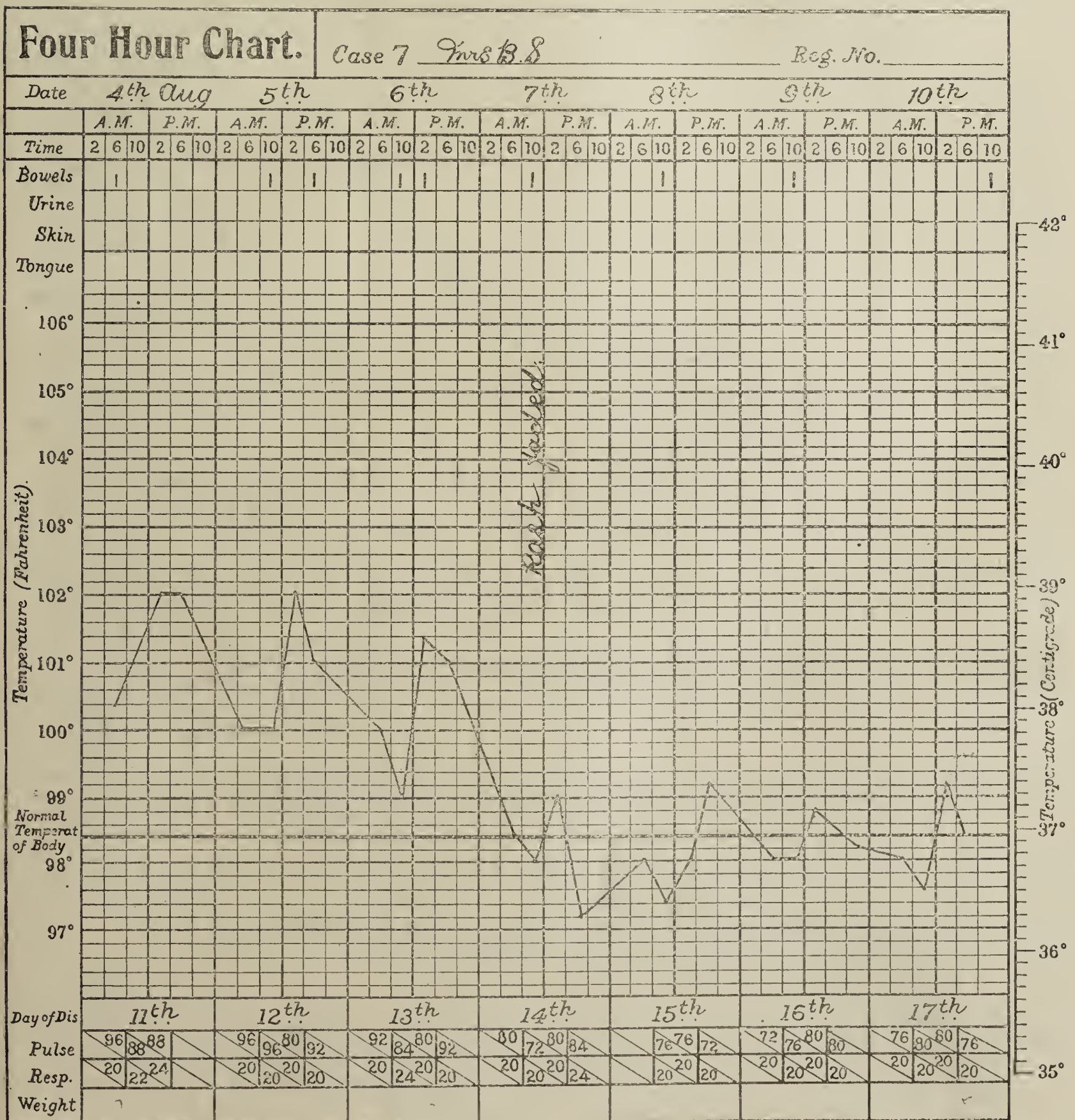
EPIDEMIOLOGICAL CONSIDERATIONS.

Case 6 (E.E.C.) showed many features common to cases observed elsewhere. The age of the patient (36 years) places the case in the age group (31 to 40) which, in the total Australian cases, shows the heaviest incidence.

Case 7 (Mrs. B. S.) showed the main features common to this condition, and which have been enumerated in the instances recorded. The patient, however, was not in the age period most frequently attacked, though the illness occurred in the winter months, when the majority of cases have arisen.

Endemic typhus appears to be predominantly a disease which affects males, and it is noteworthy that five out of the total seven New South Wales cases have been males. The seasonal incidence of this disease is not very marked though there appears to be a slight rise in the winter months and it is not without interest that the six cases under discussion became ill in the months as follows:—A.W. in February; E.E.C. in May; Mrs. A., N.P., A.H. in July, and Mrs. B.S. in August.

The history of the prevalence of rats in Cases 6 and 7 is in keeping with the history of other cases, though it is difficult to understand the relation of rodents to the disease unless some vector is associated with its transmission.



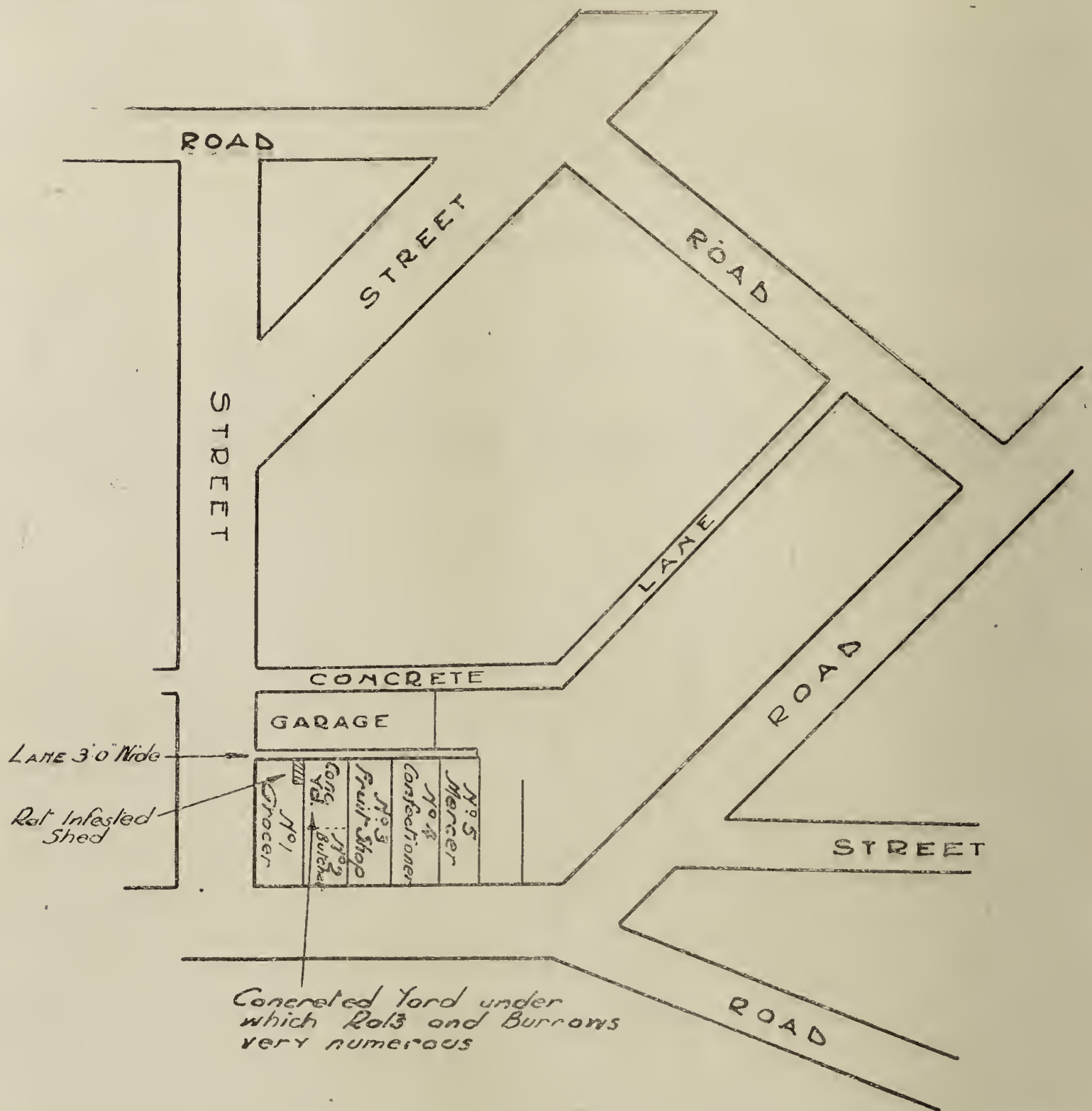
RODENT INFESTATION AND RODENTS AS POSSIBLE VECTORS OF THE DISEASE.

(a) *Place of Occupation.*

The association of the prevalence of rats or mice with endemic typhus has been noted in many outbreaks and particular attention was paid to this in regard to the case of E.E.C. The patient E.E.C. worked at a motor garage in Mosman. No history of any illness among the employees at the garage could be elicited. The garage, built of brick, is provided throughout with a concrete floor, and there is no harbourage for rats or mice. Nevertheless the patient informed me that rats gained access from other premises in the vicinity though they did not remain permanently in the garage.

(b) *At Other Premises.*

The position of the garage can be seen in the attached plan and it will be noted that on one side it abuts upon a concreted laneway about 12 feet wide. On the other side it is separated from the yards of adjoining business premises by a narrow laneway about 3 feet wide. It appears that some little time prior to the illness of E.E.C. several old sheds on the concreted laneway were demolished as unsightly structures by order of the Local Authority, and there is a certain amount of evidence that these structures were rat-infested.



It was noted in South Australia that the incidence of the disease coincided to some extent with the demolition of buildings and the consequent spread of rats owing to the destruction of their harbourage.

Whether the demolition of the structures had any relation to the case in question is not certain, but there is no question concerning the infestation by rats of premises which are in nearest proximity to the garage.

The yards of the five business premises are separated, as previously mentioned, from one side of the garage by a narrow laneway. These shops are occupied as follows:—

- (1) Grocer, four or five persons engaged in the business.
- (2) Butcher, two persons resident on the premises, and two or three additional assistants in the shop.
- (3) Fruiterer, five people engaged in the business and resident on the premises.
- (4) Confectioner, seven people resident on the premises.
- (5) Mercer, apparently a lock-up shop.

All these premises were heavily rat-infested, particularly the adjoining premises (1) grocer and (2) butcher. In the yard of No. 1 is a small shed for the storage of bran, pollard and similar food-stuffs. This shed is of ramshackle construction with earth floor and the rats scurried in every direction at the time of inspection. An open bag of bran (or pollard) was so thickly coated with rat excreta that one could not see the surface of the bran. The yard of No. 2 premises is completely covered with concrete, under which the rats had burrowed to gain access to premises beyond. The infestation appeared to be most marked at No. 1 (grocery premises) and to decrease directly with the distance therefrom.

(c) *At Patient's Private Residence.*

The residence of the patient was a very old brick cottage with weatherboard kitchen and laundry, situated at ... avenue, Mosman. The economic status of the patient was poor, and the home was not satisfactory in regard to cleanliness, &c. The premises were definitely rat-infested, the patient's wife complaining of their presence in the ceilings and under floors. Ample evidence of untidiness and the presence of food scraps distributed indiscriminately showed that there was every encouragement for the rodents.

FOOD-STUFFS FROM SOUTH AUSTRALIA AS A POSSIBLE ASSOCIATION.

In order to trace any possible connection between the importation from South Australia of food-stuffs with this case special inquiry was made at my direction by Inspector Garrow. This line of action was taken partly to trace any relationship between the movement of cereal food-stuffs as a means of transporting rodents, and partly because of the fact that the incidence of this disease has been most marked in grocers, farmers and other people who come in contact with such food-stuffs. Several of the leading produce merchants were interviewed by Inspector Garrow, but beyond the fact of heavy importation from South Australia of bran and pollard and barley no significant information was obtained.

I made personal inquiry from the firm who supplied the grocer's shop No. 1 with cereals, &c. This firm does not import from South Australia but purchases almost exclusively local grown products.

ACTION TAKEN.

The position in regard to rat-infestation was immediately brought under the notice of the Local Authority, and action was taken to control same. Sixteen rats were caught at the various premises mentioned and submitted to bacteriological examination. The Weil-Felix reaction was negative in all dilutions from 1 in 20 to 1 in 1,280.

POSSIBLE FACTORS ASSOCIATED WITH THE DISEASE.

Recent medical writers in the United States suggest the possibility of endemic typhus fever being spread from infected rats by the bite of the tropical rat mite (*Liponyssus bacoti*). This mite is known to occur in Australia; in fact, was first reported as a blood sucker of man at Sydney by Hirst*.

Shelnire and Dove† quote Maxey, "an outstanding authority on endemic typhus or Brill's disease" to the effect that "a reservoir for the disease may exist other than in man, a rodent reservoir with accidental transmission to man through the bite of some parasitic blood-sucking insect or arachnid. The rodents upon which suspicion immediately falls are rats and mice, and the parasitic intermediaries which are first suspected are fleas, mites, and possibly ticks." He bases this hypothesis on "(1) the uneven focal distribution of the disease, (2) its sporadic occurrence, (3) its apparent lack of direct communicability from an infected person, (4) its association with the place of business rather than with the home, particularly with those premises upon which foodstuffs are handled or stored, (5) the recurrence of cases on the same premises after considerable intervals of time, and (6) its seasonal incidence."

Considering the prevalence of rodents one would imagine that if they were directly associated with the transmission of the disease that the latter would not occur in isolated sporadic instances, but would spread to some extent from any given case to other individuals.

It is very probable that many cases which do arise are overlooked, and until the medical profession recognises the possibility of this condition in any anomalous cases of measles, typhoid fever, &c., it will not be possible to form any accurate idea of the incidence of this disease in the community.

(b) CASE OF IODINE RASH SIMULATING SMALLPOX (30/72992).

R.H., aged 70 years. First seen in September, 1930. In Australia for past twenty years. For several years immediately preceding illness lived in Sydney; for past two months lived in Woolloomooloo.

He had been a stone-mason, but had not worked for about nine years, managing to exist on some small savings.

History of Present Illness.—For about a month prior to coming under observation he had not been feeling in his usual health, and was troubled with a cough which may have been partly due to some underlying silicotic lung condition, as there was a history of blood-stained sputum. After taking a bottle of a proprietary cough mixture he decided to obtain a bottle of "blood purifier," of which he took some four doses.

The latter medicine was taken on Tuesday, 9th September, 1930. On Wednesday, 10th September, 1930, "pimples" came out on face and hands, and it is stated that he picked at these and endeavoured to treat them.

As he was living in one room, few people, except his landlady, saw him, but on 15th September, 1930, he remained in his room all day. On 16th September, 1930, his landlady saw him and decided that his condition was such as to warrant calling in Dr. Eakin.

Dr. Eakin could obtain no history of definite illness, but discovered a very suspicious rash rather extensively distributed, and with every justification reported the case to this department as possibly smallpox. The patient was immediately brought to the Department of Public Health in an ambulance and was seen by me.

On examination the patient was seen to be obviously in a serious condition. He was a big man, fairly well nourished, but owing to his swollen, dry tongue and ulcerated mouth, which made speech unintelligible, it was not possible to obtain any accurate history.

* Bull. Entom. Res., Vol. 5 : 225-9 ; 1914.

† Jour. Amer. Med. Assoc., Vol. 96, pp. 579-584.

He had no temperature, did not complain of headache, backache, pain or vomiting. The outstanding feature was a rash which was present all over head and face, back and limbs, but not on chest and abdomen, and was stated to have been present for about one week. The rash was bullous in type, some of the bullæ being as large as a florin, and were filled with blood-stained serum; others varied in size from large papules up to medium sized vesicles, and many were filled with purulent-like material; some few were umbilicated. The nose was swollen and black, suggestive of gangrene which may have been due to secondary infection. The external surface of eyelids showed ulceration due to the breaking down of pustular rash, whilst the chin, lips and inside of mouth were ulcerating in a somewhat similar manner.

The bullæ were largest and most numerous on the limbs, particularly on the hands, including the palms, whilst here and there they had broken down, leaving an ulcerated surface. The condition of the patient and particularly the distribution of the rash were strongly suggestive of variola.

The rash had definitely a centrifugal rather than a centripetal distribution, and was quite marked on the palms, but was not present on many sites usually specially selected by smallpox, *e.g.*, malar bones, pressure areas, etc. The character of the rash was not conclusive. The lesions were superficial rather than deep. The large bullæ, irregular vesicles, different stages of development of lesions and particularly the fact that all the lesions were irregularly distributed with large areas of healthy skin intervening were against smallpox. The soles of the feet showed no lesions similar to other parts, but a mottling suggestive of subcuticular hæmorrhages was present.

The diagnosis arrived at was "probably pemphigus," and the patient was sent to Coast Hospital on 16th September, 1930. Here the case was queried as possibly smallpox, and was seen by Dr. Murray Will, Hon. Dermatologist, who suggested that the condition might be due to iodides, but he was not prepared to eliminate smallpox. A consultation was held by Drs. W. G. Armstrong, F. M. Suckling, R. M. McMaster and myself on 18th September, 1930. The consensus of opinion was against smallpox, but owing to the possibility of error in diagnosis the case was regarded as "suspicious."

Epidemiological investigation was fruitless. There had been no possible source of infection, and no other cases suspicious or actual had been brought under notice during the previous year.

Five other unvaccinated people were present in the same house with patient, but no history of illness was obtainable. On further investigation the remains of the "blood purifier" were discovered in the patient's room, and by inquiry from the pharmacist who manufactures the preparation it was found to consist of Pot. Iodid ($3\frac{1}{2}$ gr. per dose), Liq. Donovan (3 minims per dose), Sarsaparilla, Taraxacum, Ext. Glycyrrh Liq. and Ol Sassafras. The patient died on 20th September, 1930.

The patient could not have consumed more than 15 grains of pot. iodid, but apparently owing to idiosyncrasy this small amount was sufficient to cause such a remarkable reaction.

The diagnosis of iodide poisoning was therefore considered to be warranted by the facts above mentioned, especially since no further cases arose, as would inevitably have been the case if the patient had suffered from smallpox.

A further fact showing that the condition was due to iodides is that the fluid obtained from several bullæ when analysed by the Government Analyst showed the presence of iodine.

In the effort to arrive at a diagnosis Paul's rabbit's-eye test was carried out by the Principal Microbiologist. The test was inconclusive. Macroscopically the test would have been accepted as positive, but confirmatory findings were not obtained microscopically.

Pneumococci and Streptococci were cultured from the bullæ, and an emulsion of these cultures produced a similar appearance to that produced by the pus.

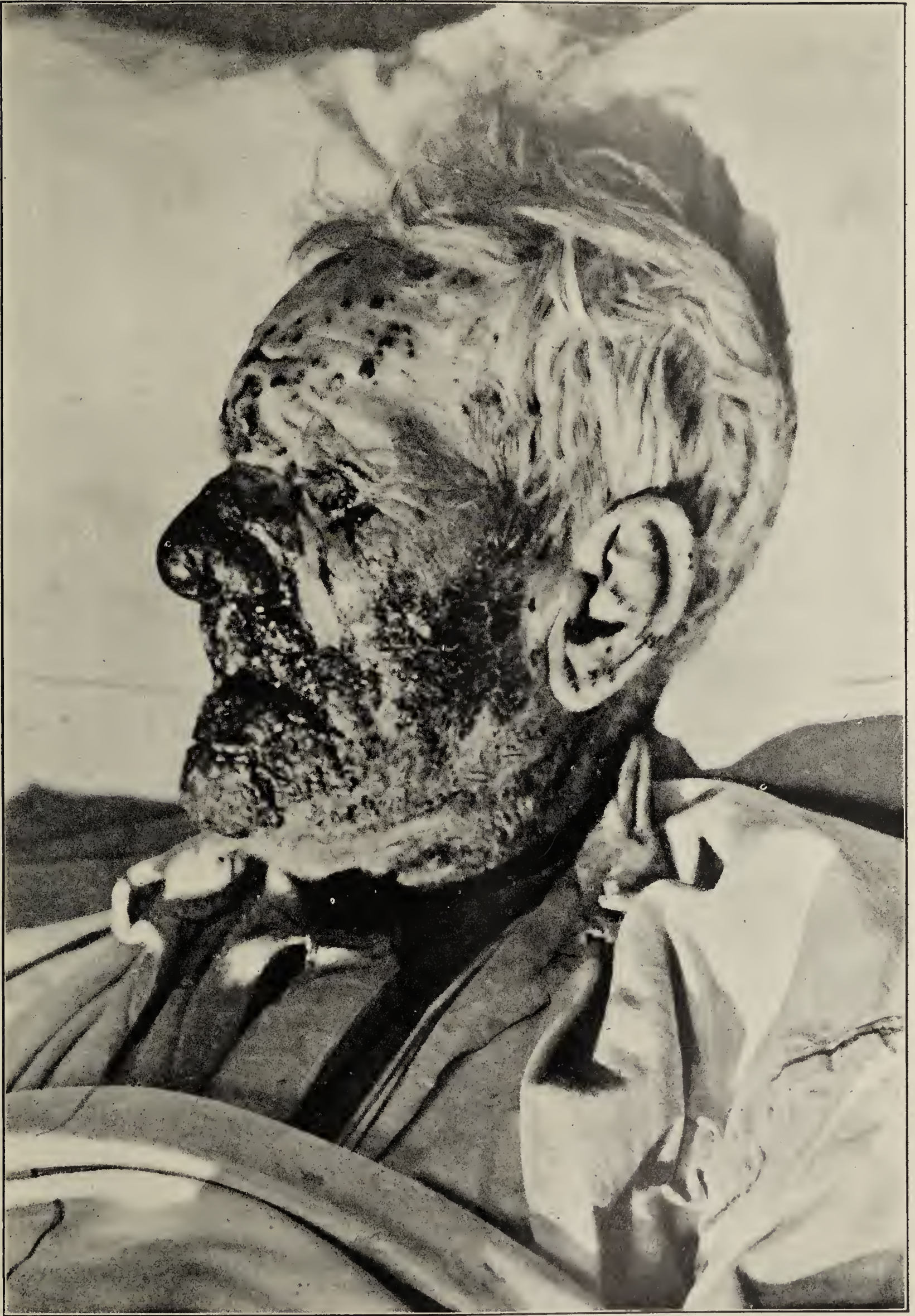
In regard to drug rashes, C. B. Ker in his textbook on infectious diseases* points out what is not generally recognised, that the rash caused by bromides and iodides has a very similar distribution to that of smallpox.

In "A Textbook of the Practice of Medicine" (edited by Frederick W. Price)† the following is stated on p. 1322,—

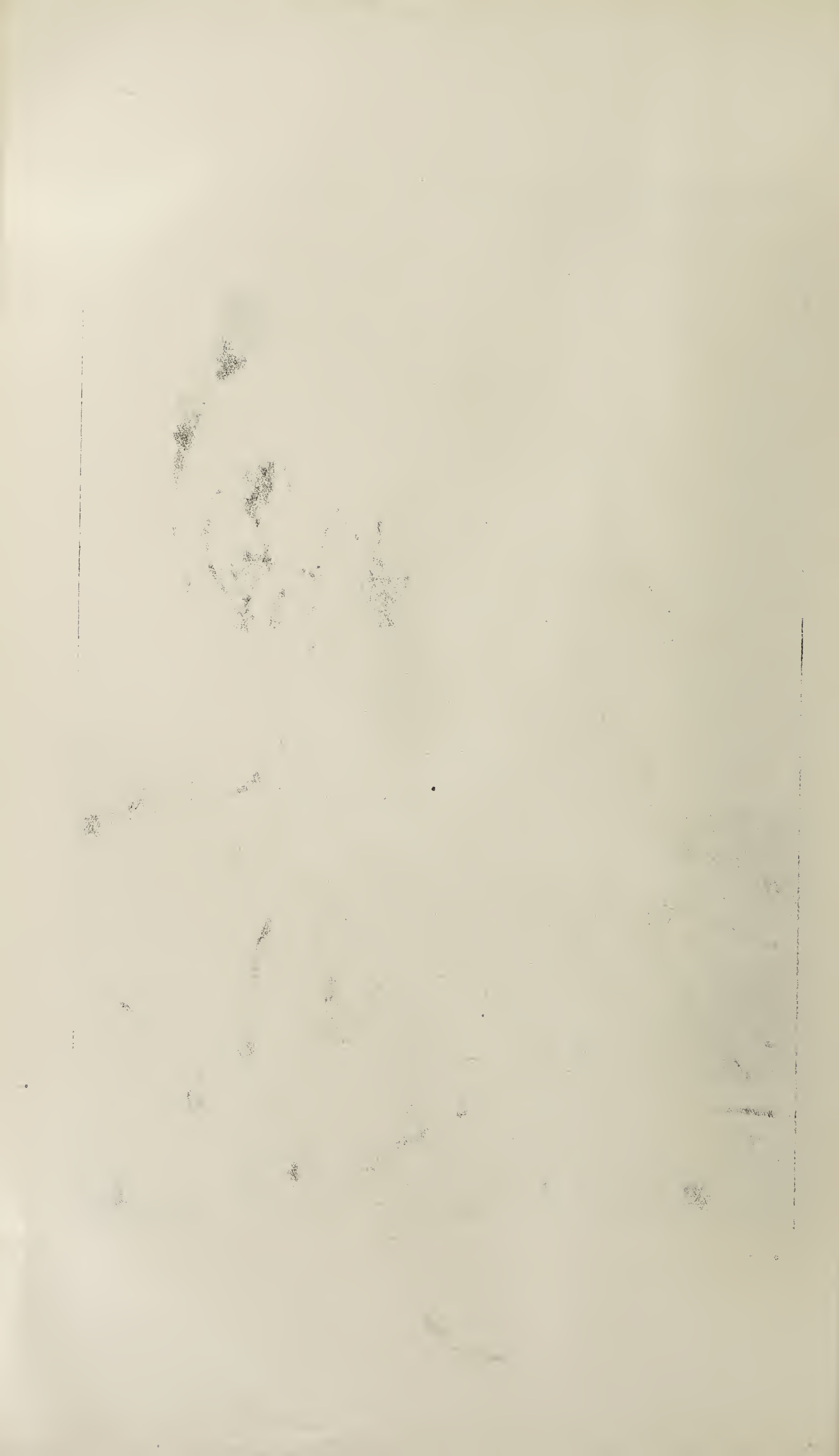
"*Iodides*: The most typical lesions produced by iodides are papules which look like vesicles and bullæ, but when pricked only blood escapes. They are sometimes spoken of as "pseudo-bullæ." They are common on the face and extremities, and often appear after taking quite small doses of iodides and within a very short time, even as quickly as twenty-four hours. They are most common in patients suffering from nephritis. These lesions may increase rapidly in size and produce large tumour-like masses, studded with pustules or with a crusted or ulcerated surface, and when occurring in patients who are seriously ill may hasten a fatal termination from septic absorption. In the early stages the cases have been mistaken for smallpox. An acne similar to that produced by bromides is also seen.

Three photographs of the patient give some idea of the condition as seen clinically.

* Ker, Infectious Diseases, 2nd Ed., 1920, p. 184. † 3rd Ed., 1929.



*49259







VENEREAL DISEASES ACT, 1918.

REPORT ON OPERATION OF THE ACT FOR THE YEAR ENDED 31ST DECEMBER, 1930.

Commissioner - - - ROBERT DICK, M.B., M.S., D.P.H.

Director of Division - JOHN COOPER BOOTH, M.B., B.S.

Notifications.—5,225 notifications of venereal disease were received during 1930, a decrease of 1 compared with 1929 and 1928. Of these notifications 45·36 per cent. came from private medical practitioners as compared with 49·92 per cent. in 1929.

Syphilis.—Of the 5,225 total notifications received during 1930, 1,412 were for cases of syphilis (males 937 and females 439), a figure 417 above that for 1929 and higher than any year since 1921 (which was the first complete year following the enforcement of the Venereal Diseases Act, 1918).

The notifications of syphilis for 1929 were low, being about 26 per cent. below 1928, and part of the increase for 1930 may be attributed to an incline upwards towards the general yearly average. This alone, however, does not account for the increase for 1930. Part is due to a definite increase in the amount of primary syphilis and part also to discovery of unsuspected syphilis in persons who have presented themselves for medical examination as a result of departmental educational propaganda.

During the decade the Act has been in operation the sex ratio of notified cases of syphilis has averaged 2·94 males to one female case, the figures being 2·22 to 1 in 1930, 2·49 to 1 in 1929, and an average of 3·1 to 1 for the previous eight years.

Of the cases of syphilis notified in 1930, 19·76 per cent. were being treated privately as compared with 30·95 per cent. in 1929 and 21·35 per cent. in 1928.

Of the total notifications of venereal disease in 1930, syphilis contributed 27·02 per cent. as compared with 19·04 per cent. in 1929 and 24·01 per cent. in 1928.

The notifications of syphilis gave a rate of 56·7 per 100,000 of population for 1930 compared with 40·4 per 100,000 in 1929, and 51·7 per 100,000 in 1928.

Gonorrhoea.—Of the 5,225 total notifications received during 1930, 3,557 were cases of gonorrhoea (males 3,022 and females 535), a figure 422 less than that for 1929. The sex ratio of notified cases of gonorrhoea shows a slight decrease (·74) for males for 1930.

During the decade the Venereal Diseases Act has been in operation the sex ratio of notified cases of gonorrhoea has averaged 8·25 males to one female case, the figures being 5·64 to 1 in 1930, 6·39 to 1 in 1929, and an average of 8·81 to 1 for the previous eight years.

Of the cases of gonorrhoea notified in 1930, 52·23 per cent. were being treated privately as compared with 51·99 per cent. in 1929 and 37·36 per cent. in 1928.

The percentage of cases of gonorrhoea notified in the total notifications of venereal disease was 68·08 per cent. for 1930 as compared with 76·14 per cent. in 1929 and 71·09 per cent. in 1928.

The notifications of gonorrhoea gave a rate of 142·9 per 100,000 of population for 1930 compared with 161·4 per 100,000 in 1929 and 153·1 per 100,000 in 1928.

Other forms of Venereal Disease.—*Soft Chancre* is uncommon in this State and notifications were ·42 per cent. of the total notifications of venereal disease for 1930 as compared with ·27 per cent. in 1929 and ·52 per cent. in 1928.

Gonorrhoeal Ophthalmia increased to ·15 per cent. of the total notifications as compared with ·06 per cent. for 1929 and 1928.

Venereal Warts were reported ·32 per cent. of the total notifications for 1930 as compared with ·25 per cent. in 1929 and ·23 per cent. in 1928.

Gleet.—Notifications of this condition accounted for 4 per cent. of the total notifications of venereal disease in 1930 as compared with 4·25 per cent. in 1929 and 4·07 per cent. in 1928.

Failure to continue treatment.—If a patient has discontinued treatment before being discharged as cured or free from venereal disease, the Act provides that his name and address must be forwarded by his medical attendant to the Commissioner in order that steps may be taken to secure resumption of treatment.

During 1930 the names and addresses of 774 defaulters (506 males and 268 females) were forwarded to the Commissioner. This figure is 68 less than last year. The defaulters for 1930 represent 14·81 per cent. of the total notifications of venereal diseases as compared with 16·11 per cent. for 1929 and 21·28 per cent. for 1928.

Owing to wrong information having been given 351 letters (a decrease of 36 as compared with last year) were returned, unclaimed giving 45·35 per cent. undelivered letters for 1930 as compared with 45·96 per cent. for 1929 and 39·62 per cent. in 1928.

Many medical practitioners still appear to be loth to notify defaulters according to the requirements of the Act and Regulations, and as a result many syphilitics are being permitted to face a future which is fraught with disastrous possibilities.

Defaulters notified to the Commissioner under the Act.—For the decade 1921-30 this Act has been in operation there have been 13,521 defaulters notified of which 4,535 resumed treatment, leaving a balance of 8,986 apparent permanent defaulters. Letters returned unclaimed numbered 6,851. 2,135 persons apparently received notices but still remained defaulters.

During the decade there were 58,526 notifications of venereal disease and the defaulters averaged 23·1 per cent. of this number.

The following table shows the percentage of notified defaulters who remained apparent permanent defaulter.—

Year.	Total Defaulters Notified.	Resumed Treat. ment, Dead, or left State.	Remained in Default.	Percentage Remaining in Default.
1921	2,472	906	1,566	61·73
1922	1,992	628	1,364	68·47
1923	1,749	545	1,204	68·84
1924	1,354	422	932	68·83
1925	955	241	714	74·76
1926	1,060	280	780	73·58
1927	1,210	304	906	74·88
1928	1,113	441	672	60·38
1929	842	368	474	56·29
1930	774	400	374	48·32

There has been a decrease in the percentage of persons remaining permanent defaulters during 1930, and although the present figure compares well with the returns of other nations we consider the results still unsatisfactory.

More active steps were taken during 1930 to follow up defaulters, but the giving of false names or addresses made it impossible in 45·35 per cent. of the cases to establish contact. Where contact was established the percentage of persons failing to resume treatment was only 2·97 per cent.

The location and control of defaulters will always be difficult. The unfortunate stigma attached to these diseases and the innate instinct to hide one's identity in order to protect one's social standing and family happiness accounts for much of the inaccurate information which is supplied.

CLINICS.

Metropolitan District.—In 1930 the clinic at the Balmain District Hospital was added to the list of specially subsidised clinics.

There are now nine (9) clinics in operation, only one of which (at the Rachel Forster Hospital for Women and Children) may be classed as continuous.

The clinic at the Rachel Forster Hospital for Women is now the largest clinic for venereal disease in the female and has attracted patients chiefly on account of the excellent work which is done there, though the fact that the hospital is staffed by women and treats women only has undoubtedly been an additional inducement.

805 female cases were notified by public clinics in the metropolis during the year and were located as follows in order of percentage :—

Hospital.	Percentage of Total.
The Rachel Forster Hospital for Women and Children	38·38
Royal Prince Alfred Hospital	24·47
Sydney Hospital	17·27
Royal Alexandra Hospital for Children	9·69
Royal North Shore Hospital	5·71
Balmain District Hospital	2·86
Royal South Sydney Hospital	1·61

During the year 1,497 male cases were notified by public clinics in the metropolis and were located as follows in order of percentage :—

Hospital.	Percentage of Total.
Coast Hospital Clinic	28·39
Royal Prince Alfred Hospital	28·12
Sydney Hospital	23·31
Royal South Sydney Hospital	9·49
Royal North Shore Hospital	8·95
Royal Alexandra Hospital for Children	1·00
Balmain District Hospital	0·73

The Coast Hospital clinic and the clinic at the Rachel Forster Hospital for Women are both under Government control. The clinic at the Coast Hospital is the largest clinic for syphilis. The success of these two clinics is sufficient encouragement to warrant the recommendation that a central continuous clinic should be established as soon as is possible for the treatment of venereal diseases in the male. This is an urgent matter and one of national importance, and has been strongly recommended in previous reports.

There has been an increase of 238 in the number of patients admitted to public clinics and a decrease of 239 in the number reported treated privately. The notifications from private practitioners cannot be taken as a true indication of the amount of venereal disease being treated privately, for, unfortunately, there are medical practitioners who fail to comply with the requirements of the Act.

Attendances at clinics for males numbered 58,637 in 1930 as compared with 64,349 in 1929; at the clinics for females the figures were 22,860 in 1930, compared with 20,529 for 1929.

Clinics attached to public hospitals are still carrying on under difficulties as regards staff, finance and accommodation, and the outlook for 1931 is not at all promising.

Most general public hospitals are gradually realising that the treatment of venereal disease in their respective districts is a service which may reasonably be expected of them and are attempting to provide accordingly.

Newcastle District.—There has been an increase in notifications of venereal disease from the Newcastle district, the figures being 266 for 1930 as compared with 142 for 1929 and 34 for 1928. The notifications are still absurdly small and cannot be taken as any indication of the amount of venereal disease in an industrial city of over 108,000 inhabitants.

Newcastle is still without its proposed modern clinic and mention of the necessity for the establishment of such a clinic is made once again. The provisions for treatment of venereal disease in Newcastle and district are totally inadequate and have been so for many years.

Bed Accommodation.—The Coast Hospital provides bed accommodation for 91 male patients and at other institutions there is a total of 29 beds for females and 15 for children.

There is still need for the provision of a hostel for women who are attending as out-patients at clinics, and for additional accommodation for pregnant infected women.

Expenditure.—The yearly grant of £4,500 from the Federal Government towards the expenditure incurred in connection with venereal disease in this State ceased suddenly as from 30th June this year.

The expenditure for 1930 was £37,385. In 1929 it was £36,895 and in 1928, £31,275.

Pathological Examinations.—Table 2B shows the use made of laboratory tests for diagnostic purposes and progress reports during treatment.

In 1930, 30,381 seriological tests were made on 13,418 specimens as compared with 21,166 on 9,180 in 1929.

In 1930, 5,734 smears were examined for the detection of gonococci as compared with 4,924 in 1929.

AGE AND SEX OF PATIENTS REPORTED.

An analysis has been made of the age and sex grouping of patients notified according to the requirements of the Venereal Diseases Act during the years 1924–1930.

38,756 consecutive notifications have been analysed (33,219 being males and 5,537 females), and a percentage allotted to each age grouping according to its relation to the total notifications of venereal disease for that period of seven years.

The sex ratio was 5.99 males to one female. The accompanying graph is of interest.

It will be noticed that females exceed males in the age groups 0–5, 6–10 and 11–15. The male group line rises and crosses the female group line in the period 16–20, and never again does it cross the female line but remains constantly higher for each group.

Females may be said to reach their peak period in the groups 16–20 and 21–25. Both sexes are at their peak in the groups 21–25, with a ratio of 7.22 males to one female.

The sex ratio in the groups 16–20 is 3.41 males to one female.

As the figures stand it would appear that a child should have education in sex matters before reaching the age of 16 years.

ANALYSIS of 38,756 consecutive notifications of venereal diseases into sexes and age groups.

Age Group.	Male.	Female.	Percentage.	
			Male.	Female.
0–5	153	363	.39	.94
6–10	92	270	.24	.69
11–15	160	255	.41	.66
16–20	4,124	1,210	10.64	3.12
21–25	8,800	1,218	22.71	3.14
26–30	7,389	765	19.06	1.97
31–35	4,603	538	11.88	1.39
36–40	3,191	366	8.23	.94
41–45	1,894	208	4.89	.54
46–50	1,097	162	2.83	.42
Over 50.....	1,513	126	3.9	.33
Age not stated.....	203	56	.52	.14

THE PREVALENCE OF SYPHILIS.

During the year an attempt was made to gain some idea of the amount of syphilis which might be present in certain sections of the community.

The Medical Superintendent of Lidcombe State Hospital and Home for Men drew blood as a routine from 2,961 admissions into that institution and a positive Wassermann reaction was present on 10·53 per cent. of the bloods tested. Of these men 25·38 per cent. returning a positive Wassermann were aged 50 years and under, 25 per cent. between the ages of 51 and 60 years and 31·44 per cent. were between the ages of 61 and 70 years.

Routine examination of the blood of 1,004 admissions into Newington State Hospital and Home for Women revealed 13·64 per cent. positive Wassermann reactions. The blood test for syphilis is routine in both the above institutions.

Bloods from 137 children from the country brought to Sydney for various disabilities (deformities, &c.) were examined and all failed to give the Wassermann reaction.

Examination for syphilis by blood test should be more a part of the routine of diagnostic procedure than is the custom in medical practice at present.

The true prevalence of syphilis is at present unknown. The only figures available are those of detected cases which have been reported. The results of routine tests here and in other countries indicate the unreported and undetected cases must far outnumber the figures for syphilis which are presented in yearly Departmental reports.

The early detection of syphilis is important. We live in an age of increasing speed and use conveyances which are frequently controlled by one person. The driver or pilot of such a conveyance should be tested for syphilis every five years at most as on his health and mental alertness depend the lives of his passengers.

With the expansion of educational propaganda it is to be expected that more hidden cases of syphilitic infection will be detected and the rate will naturally rise.

This Department has focussed attention on syphilis especially, for this disease is one of the first magnitude and its control of national importance.

With united international action and legislative support it would be possible to entirely remove syphilis from the list of active diseases within a generation.

VENEREAL DISEASE NOTIFICATIONS.

Year.	Total Notifications.	Percentage Grouping in Notifications for Year			Mean Population.	Rate per 10,000 of Mean Population.		
		Syphilis.	Gonorrhoea.	Other V.D.		Syphilis.	Gonorrhoea.	Other V.D.
1921	9,405	21·85	70·89	7·26	2,108,369	9·75	31·62	3·24
1922	6,298	20·16	71·71	8·13	2,150,862	5·90	20·99	2·38
1923	6,829	18·16	74·90	6·94	2,192,146	5·66	23·33	2·16
1924	6,090	15·89	75·99	8·12	2,230,166	4·34	20·75	2·21
1925	5,314	19·10	74·01	6·89	2,275,886	4·46	17·28	1·61
1926	6,001	19·65	74·84	5·51	2,321,917	5·08	19·34	1·42
1927	5,674	22·15	72·86	4·99	2,374,264	5·29	17·41	1·19
1928	5,226	24·01	71·09	4·90	2,426,300	5·17	15·31	1·05
1929	5,226	19·04	76·14	4·82	2,464,510	4·04	16·14	1·02
1930	5,225	27·02	68·08	4·90	2,489,657	5·67	14·29	1·03

EDUCATIONAL PROPAGANDA.

Several suburban and country papers have published articles which have been compiled in this Department and submitted to them by the Publicity Officer (Mr. A. G. White), dealing with various aspects of the venereal diseases problem.

The effect of such publicity was watched with interest. The result has been most promising and has clearly demonstrated that the public is interested in such matters, and that in many instances the interest is due to some unfortunate personal experience in days gone by or to present trouble.

The Director of the Division of Venereal Diseases has had numerous letters and visits from readers of these articles and is satisfied that such publicity is extremely valuable and is desired by many readers. It is realised that the various editors were pioneers in a new field of public service and that possibly they were doubtful as to the wisdom of the step they took. They have performed a greater service to the community than they realise, and this Department is grateful to them for their services.

It is hoped that now that the press has been interested that its valuable help will be given from time to time in this important part of educational propaganda.

A Health Week was held in October and in the free booklet issued in that week there was a short article on the " Campaign against Venereal Diseases." Two wireless talks were given during the same week from 2KY and 2BL. This publicity was responsible for letters and visits to this Department.

During the year the various films, in the possession of this Department, dealing with venereal disease and sex hygiene were screened at public meetings in conjunction with lectures and addresses.

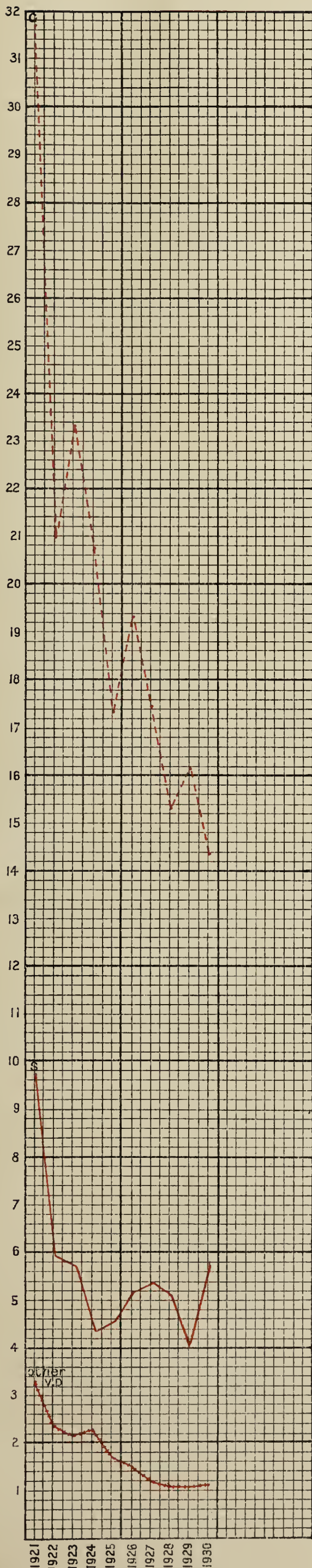
The members of the Racial Hygiene Association of New South Wales and of the " Father and Son Welfare Movement " organised meetings, displayed films and distributed literature.

VENEREAL DISEASE.

Notifications per 10,000 of Population.

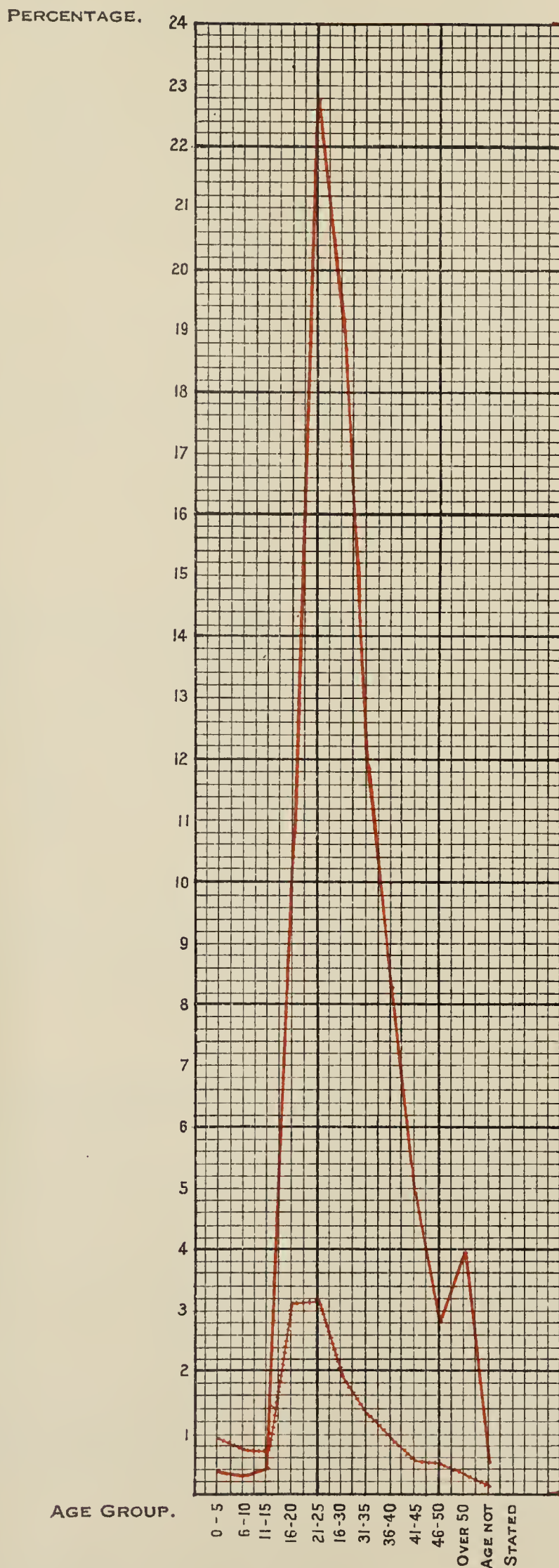
SYPHILIS —————
 GONORRHOEA - - - - -
 OTHER V.D. ————+———

RATE PER
10,000 MEAN
POPULATION.



Age Group Percentage in 38,756
Consecutive Notifications of
Venereal Disease.

MALE —————
 FEMALE ————+———



PROSECUTIONS.

There were five prosecutions under the Venereal Diseases Act during the year, viz. :—
Section 25—

1. Action taken for a breach of this section. Fined £3 and 8s. costs.
2. Action taken for publishing a statement. Fined £5 and 8s. costs.
3. Action taken for publishing a statement. Fined £5 and 8s. costs.
4. Action taken for publishing a statement. Fined £5 and 8s. costs.
5. Action taken for publishing a statement. Fined £2 and 8s. costs.

Most of the statements published had to do with alleviation of impotency.

The following tables are appended :—

Table 1.—Notifications received during the years 1928-1930 arranged in order of district from which the notifications were received.

Table 2.—Notifications received during 1930 showing—(a) forms of disease and age and sex of patients notified; and (b) diagnostic examinations in Microbiological Laboratory, 1928-1930.

Table 3.—Summary of annual attendances at public clinics, 1928-1930.

TABLE 1.—Notifications received during 1928-1930, arranged in order of districts.

	Metropolitan Area.			Newcastle District.			Remainder of State.		
	1928.	1929.	1930.	1928.	1929.	1930.	1928.	1929.	1930.
Gonorrhœa	3,487	3,651	3,046	22	122	215	206	206	296
Syphilis	1,180	928	1,333	12	15	44	63	52	35
Soft chancre	24	14	22	...	...	...	3	...	...
Gleet	210	213	198	...	5	7	3	4	4
Venereal warts	11	13	17	...	...	...	1	...	...
Gonorrhœal ophthalmia	2	2	7	...	...	...	1	1	1
Venereal granuloma	1	...	...	...	...	...	...	...	...
Total	4,915	4,821	4,623	34	142	266	277	263	336

TABLE 2 (a).—Return of cases of Venereal Disease notified during 1930, showing forms of disease, and age and sex of patients.

	0 to 5		6 to 10		11 to 15		16 to 20		21 to 25		26 to 30		31 to 35		36 to 40		41 to 45		46 to 50		Over 50		Age not Stated.		Total.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Gonorrhœa ...	4	46	3	47	8	20	420	148	825	126	761	59	354	22	292	37	153	11	96	11	84	4	22	4	3,022	535	3,557
Syphilis ...	21	23	13	10	12	18	29	73	99	89	139	51	89	61	111	47	103	24	86	18	263	22	8	3	973	439	1,412
Soft chancre ...	...	...	...	...	...	...	2	...	3	...	3	3	4	...	1	...	2	...	2	...	2	...	...	...	19	3	22
Gleet ...	...	...	...	...	...	...	4	...	36	...	68	...	29	...	43	...	12	...	8	...	4	...	5	...	209	...	209
Venereal warts ...	...	...	...	...	...	...	...	2	3	4	1	1	2	1	2	...	1	...	...	...	...	...	...	...	9	8	17
Gonorrhœal ophthalmia ...	6	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	2	8
Venereal granuloma ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	31	71	16	57	20	33	455	223	966	219	972	114	478	84	449	84	271	35	192	29	353	26	35	7	4,238	987	5,225

TABLE 2 (b).—Diagnostic examinations for Venereal Diseases made in the Microbiological Laboratory during the years 1928-1930.

Year.	Gonorrhœa. (Smears and Urine.)	Gonorrhœa. (Complement Deviation Test.)	Syphilis. (Wassermann Reaction.)	Syphilis. (Kahn's Test.)	Syphilis. (Smears for Spirochaetes.)
1928	4,669	3,811	9,072	8,380	36
1929	4,924	3,737	9,180	8,249	43
1930	5,734	4,226	13,418	12,737	56

TABLE 3.—Summary of Annual Attendance Returns at Public Clinics for treatment of Venereal Diseases, 1928-1930.

Year.	Attendances.			New Cases.					
				Gonorrhœa.			Syphilis.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
<i>Royal Prince Alfred Hospital.</i>									
1928	28,765	6,924	35,689	557	162	719	160	62	222
1929	29,261	7,123	36,384	515	141	656	166	70	236
1930	24,274	5,785	30,059	300	117	417	121	80	201
<i>Sydney Hospital.</i>									
1928	15,729	3,764	19,493	595	80	675	192	90	282
1929	10,755	3,718	14,473	246	49	295	149	78	227
1930	10,284	4,241	14,525	170	72	242	179	67	246
<i>Royal Alexandra Hospital for Children.</i>									
1928	1,173	2,231	3,404	...	23	23	25	51	76
1929	912	1,906	2,818	1	28	29	13	19	32
1930	731	2,466	3,197	...	35	35	15	43	58
<i>Royal South Sydney Hospital.</i>									
1928	2,261	357	2,618	95	10	105	19	11	30
1929	3,215	522	3,737	133	2	140	14	7	21
1930	3,763	554	4,317	115	5	120	27	8	35
<i>Royal North Shore Hospital.</i>									
1928	3,730	1,897	5,627	83	17	100	30	19	49
1929	3,893	1,853	5,746	76	30	106	3	10	13
1930	3,591	1,938	5,529	103	30	136	28	16	44
<i>Coast Hospital Night Clinics for Syphilis (Men Only).</i>									
1. Hospital Admission Depot, Head Office (Coast Hospital Staff).									
1928	9,209	...	9,209	...	...	...	498	...	498
1929	9,875	...	9,875	...	...	...	436	...	436
1930	10,332	...	10,332	...	...	...	425	...	425
2. Coast Hospital, Little Bay.									
1928	2,129	...	2,129	...	...	...	...	...	...
1929	6,438	...	6,438	...	...	...	...	...	...
1930	5,341	...	5,341	...	...	...	...	...	...
<i>Rachel Forster Hospital for Women and Children.</i>									
1928	M. and F.	4,413	4,413	...	101	101	...	74	74
1929	M. and F.	5,404	5,404	...	103	103	...	68	68
1930	M. and F.	7,101	7,101	...	182	182	...	127	127
<i>Balmain District Hospital.</i>									
1930	321	775	1,096	...	4	4	11	19	30

TUBERCULOSIS DIVISION.

REPORT OF DIRECTOR TO 31st DECEMBER, 1930

STAFF :

Director—Dr. H. K. DENHAM, B.A., LL.B., M.B., Ch.M., D.S.O., V.D.

1 Clerk, 4 Visiting Nurses.

The work of this Division during the year has been directed largely towards popularising the work of the anti-tuberculosis dispensaries or clinics, as it is recognised that besides being a diagnostic centre the clinic or dispensary must be regarded as an educative centre affecting the homes of the patients and as a "clearing-house" to the sanatorium. By endeavouring to secure for individual patients early diagnosis, prompt treatment and admission to a suitable sanatorium and by driving home lessons of great educative value in personal and domestic hygiene, there is no doubt that the prevention of disease and ill-health generally has been greatly furthered by the anti-tuberculosis campaign.

Co-operation.—There has been the same ready co-operation with the Board of Control and this Division by the various anti-tuberculosis associations, but there is still room for a very much closer co-operation with private practitioners and private sanatoria. Other Government departments have given active assistance whenever approached; the Pensions Department forwards lists of particulars of all applicants who are suffering from tuberculosis; the Repatriation Commission furnishes at monthly intervals lists of all cases of tuberculosis among returned soldiers whether it is recognised as a war disability or not; the Child Welfare Department notifies this Division of all families in which a member is known or suspected to have tuberculosis; all of which ensures the family being visited and suitable instruction given to avoid the spread of infection; the Chief Secretary's Department gives monetary assistance for a short period in necessitous cases; lists are sent to the Education Department each month of all children contacts attending school, and particular attention is being paid to these at school inspections and periodic medical examination of pupils.

Notification.—Notification of pulmonary tuberculosis is now compulsory over the whole of the State of New South Wales, and during the year there has been a considerable increase in the number of notifications received. It is felt, however, that there are still a great number of medical practitioners who are either ignorant of the provisions of the Act regarding notification or who are deliberately omitting to notify cases. Every effort is being made to bring to the notice of medical practitioners the importance of notifying cases and also their legal obligation to do so, and to this end, an article on the subject has been prepared for publication in the Medical Journal of Australia and will appear in its issue of 3rd January, 1931. In addition, notices are sent to medical practitioners who are known to have treated a patient for pulmonary tuberculosis and have failed to notify same. The number of such notices issued during 1930, 264, is an increase of 132 on the number for 1929. It is hoped that by these means the closer co-operation of the private medical practitioners will be secured and will result in the notification of more, and incidentally, earlier cases of tuberculosis.

TABLE 1.—Showing the age and sex incidence of the 1,917 cases of Pulmonary Tuberculosis notified during the year ended 31st December, 1930.

Age Period.	Metropolitan Combined Sanitary District. Population : 1,324,600.			Hunter River Combined Sanitary District. Population : 201,190.			Broken Hill Combined Sanitary District. Population : 26,961.			Blue Mountains Tourist District. Population : 20,110.			Remainder of State. Population : 929,178.			Whole State Population : 2,502,039.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
0- 4 years	2	1	3	...	...	...	...	...	...	...	...	...	1	1	2	3	2	5
5- 9 "	6	1	7	2	...	2	...	...	...	...	...	...	2	...	2	10	1	11
10-19 "	27	63	90	5	5	10	1	...	1	1	4	5	13	15	28	47	87	134
20-29 "	145	166	311	11	9	20	6	1	7	12	14	26	28	32	60	202	222	424
30-39 "	168	112	280	11	7	18	7	2	9	8	10	18	43	37	80	237	168	405
40-49 "	182	76	258	17	5	22	38	...	38	8	6	14	43	18	61	288	105	393
50 years and over	220	76	296	17	8	25	101	...	101	1	4	5	77	18	95	416	106	522
Age not stated ...	13	7	20	1	...	1	...	...	...	1	...	1	1	...	1	16	7	23
All Ages	763	502	1,265	64	34	98	153	3	156	31	38	69	208	121	329	1,219	698	1,917

Federal Capital Territory—1.

The total for the Metropolitan area, 1,265, was an increase of 189 on the figure for the year 1929; that for the Hunter River District, 98, an increase of 56 as compared with 1929; 69 notifications were received from the Blue Mountains Tourist District, an increase of 12 on the figure for the previous year. Notifications in the Broken Hill district totalled 156; previous to 1930, Broken Hill was not a separate district. Notifications for the remainder of the State of New South Wales amounted to 329, an increase of 289 as compared with 1929. It will thus be seen that notifications for the whole of New South Wales totalled 1,917 for 1930, an increase of 702 on the total for 1929. In addition, during the year, 1,075 notifications of cases previously notified were received, an increase of 543 on the number received during 1929.

TABLE 2.—Showing monthly incidence of notified cases of Pulmonary Tuberculosis and also incidence of cases "To be Visited," and cases "Not to be Visited."

Month.	Metropolitan Combined Sanitary District.		Hunter River Combined Sanitary District.		Broken Hill Combined Sanitary District.		Blue Mountains Tourist District.		Remainder of State.		Whole State.	
	To be Visited.	Not be Visited.	To be Visited.	Not be Visited.	To be Visited.	Not be Visited.	To be Visited.	Not be Visited.	To be Visited.	Not be Visited.	To be Visited.	Not be Visited.
January	80	39	4	...	...	...	1	4	11	11	96	54
February	83	20	4	1	10	...	2	7	8	13	107	41
March	62	24	8	2	1	...	3	1	12	13	86	40
April	57	16	9	2	1	...	3	1	7	5	75	26
May	76	27	11	5	97	...	5	1	17	14	204	49
June	69	17	7	1	29	...	2	1	18	3	124	23
July	92	16	4	2	2	...	1	2	23	9	123	28
August	72	18	4	1	1	...	1	9	9	14	95	34
September	101	19	6	1	1	...	2	1	24	9	133	31
October	145	21	8	2	1	...	...	2	46	10	202	33
November	94	14	8	3	...	4	4	4	9	5	115	30
December	73	30	3	2	6	3	2	10	25	14	117	51
Totals	1,004	261	76	22	149	7	26	43	209	120	1,477	440
	1,265		98		156		69		329		1,917	

Federal Capital Territory—1.

Of the 1,917 cases notified, 1,173 were seen in hospital or dispensary practice, and the remainder, 744, in private practice. Of the 744 cases seen in private practice, in 440 the doctors requested that the patient be not visited by a departmental visiting nurse; the remainder, 304, were to be visited. From this it would appear that the private practitioner does not make as much use of the visiting nurse as he might, and so be relieved of considerable time that is now presumably given up by him to instruction in hygiene, &c. Here I would stress the fact that it is not the intention or desire of this Division to remove the patient in any way from the control of his own medical adviser, but on the contrary this Division prefers that he should remain in the care of the latter, save in those cases recommended for sanatorium treatment and then only whilst he is actually in the sanatorium. On discharge these patients should at once revert to the charge of their own doctor or clinic.

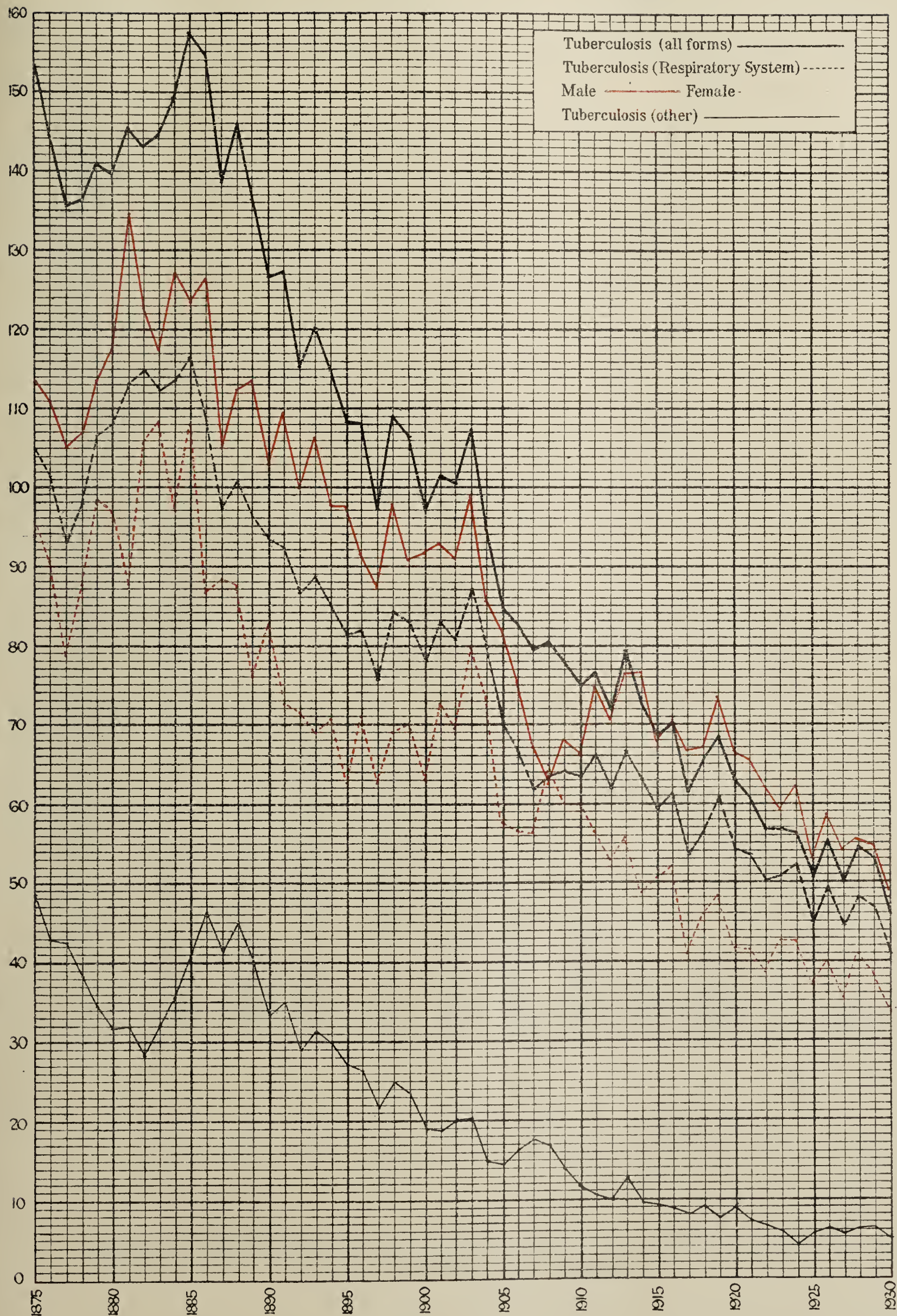
Deaths.—During the year, 1,182 notices of deaths from tuberculosis of the respiratory system were received from District Registrars by this Division, an increase of 525 on the number for 1929. Although not legally notifiable, 44 notices of deaths from other forms of tuberculosis were also received. The figure for tuberculosis of the respiratory system is unusually high by reason of the fact that some 200 notices of deaths which occurred in 1929 were received in April, 1930. This was in response to a request made by this Division to the Registrar General that District Registrars be informed of their obligation to notify deaths from pulmonary tuberculosis.

TABLE 3.—Showing monthly and area incidence of deaths from Tuberculosis.

Month.	Tuberculosis of Respiratory System.						Other Tuberculous Disease.
	Metropolitan Combined Sanitary District.	Hunter River Combined Sanitary District.	Broken Hill Combined Sanitary District.	Blue Mountains Tourist District.	Remainder of State.	Whole State.	Whole State.
January	58	2	15	4	49	128	2
February	43	2	6	4	19	74	1
March	77	7	2	3	11	100	3
April	38	11	...	1	177	227	9
May	74	6	3	3	20	106	5
June	49	4	1	2	19	75	5
July	39	6	1	3	25	74	5
August	50	2	6	1	18	77	3
September	38	1	3	...	25	67	1
October	44	1	3	1	32	81	...
November	67	4	2	4	27	104	4
December	38	6	...	5	20	69	6
Totals	615	52	42	31	442	1,182	44

Federal Capital Territory—1.

TUBERCULOSIS.
GRAPH I.
ANNUAL DEATH RATE per 100,000 OF POPULATION
IN NEW SOUTH WALES, 1875-1930

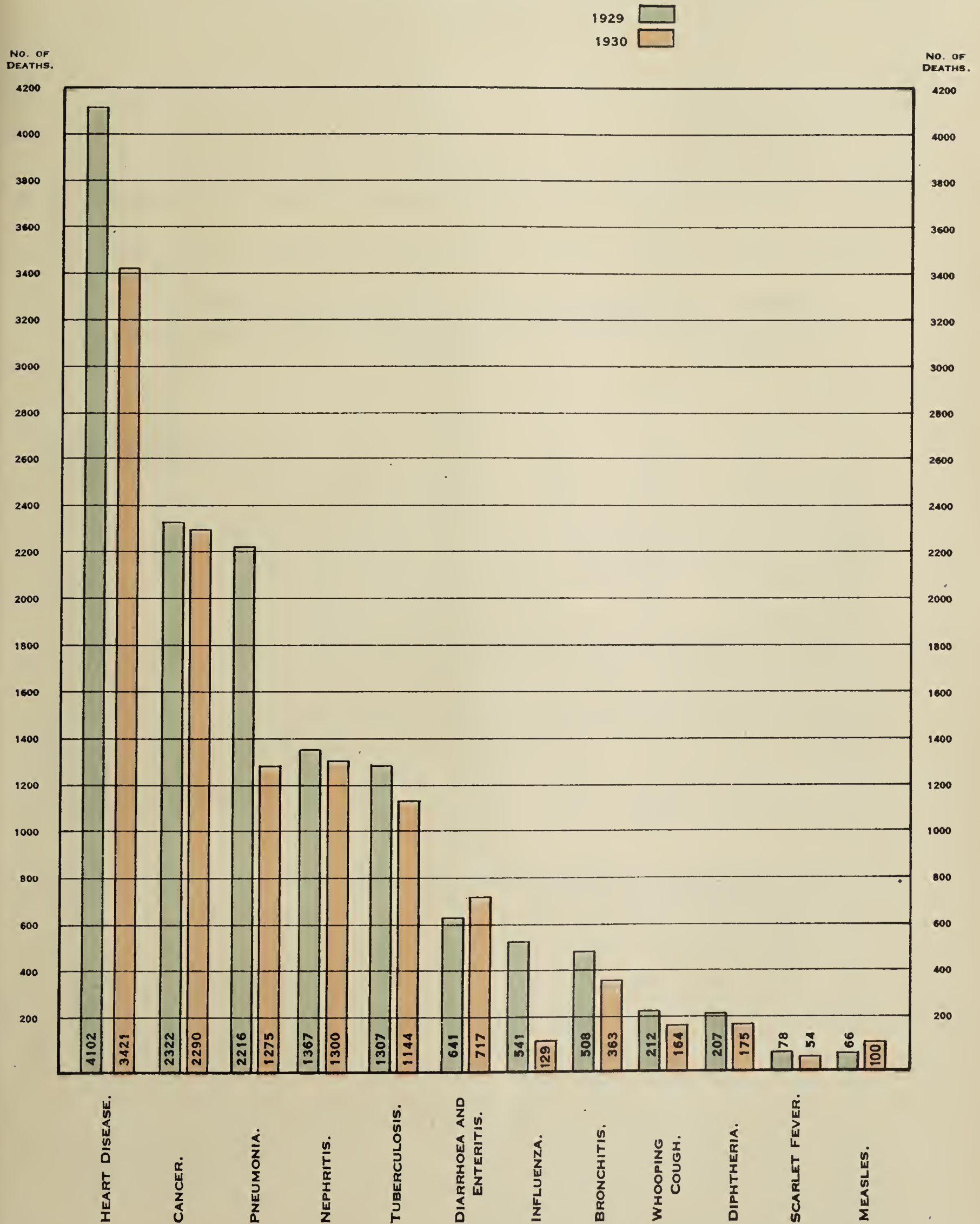


TUBERCULOSIS.

Graph 2.

NEW SOUTH WALES.

Total Deaths from Some of the Principal Diseases.



NOTE.—In 1895, Tuberculosis occupied first place as a cause of death. In 1928, it had fallen to fourth place, and, in 1929 and 1930, to fifth place.

TABLE 4.—Showing the age and sex incidence of the 1,182 deaths from Pulmonary Tuberculosis notified during the year ended 31st December, 1930.

Age Period.	Metropolitan Combined Sanitary District. Population : 1,324,600			Hunter River Combined Sanitary District. Population : 201,190.			Broken Hill Combined Sanitary District. Population : 20,961.			Blue Mountains Tourist District. Population : 20,110.			Remainder of State. Population : 929,178.			Whole State. Population : 2,502,039.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
0- 4 years	3	...	3	...	...	...	...	...	...	...	...	...	2	...	2	5	...	5
5- 9 „ .....	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1
10-19 „	5	20	25	1	3	4	...	1	1	...	3	3	9	23	32	15	50	65
20-29 „	12	80	122	7	1	8	2	1	3	5	3	8	39	52	91	95	137	232
30-39 „	84	56	140	9	5	14	7	...	7	4	7	11	33	41	74	137	109	246
40-49 „	96	48	144	5	7	12	4	1	5	3	1	4	76	23	99	184	80	264
50 years and over	131	46	177	9	1	10	25	1	26	3	2	5	91	34	125	259	84	343
Age not stated ...	3	1	4	1	2	3	...	...	...	...	...	...	11	8	19	15	11	26
All Ages	364	251	615	33	19	52	38	4	42	15	16	31	261	181	442	711	471	1,182

Federal Capital Territory—1.

Figures supplied by the Government Statistician show that deaths from tuberculosis during 1930 were as follows :—

TABLE 5.—Showing the number of deaths from all forms of Tuberculosis in (a) Metropolis ; (b) whole State, during the year ended 31st December, 1930.

	Metropolis.			Whole State.		
	M.	F.	Total.	M.	F.	Total.
Respiratory system	347	227	574	614	408	1,022
Meninges and nervous system	16	9	25	24	19	43
Other tubercular diseases.....	24	16	40	45	34	79
Total	387	252	639	683	461	1,144

The deaths from all forms of tuberculosis for 1930, viz., 1,144, show a decrease of 164 on the number for 1929; that for tuberculosis of the respiratory system, 1,022, a decrease of 130; that for tuberculosis of the meninges and nervous system, 43, a decrease of 22; and that for other forms of tuberculosis, 79, a decrease of 12 on the corresponding figures for the previous year.

On receipt of a notice of death from pulmonary tuberculosis of a patient in a private dwelling, a notice is issued from this office instructing the Local Authority to carry out the fumigation of the premises concerned. During the year 316 such notices were issued, an increase of 12 on the number for 1929.

Decline in Deaths from Tuberculosis.—The figures for 1930 indicate that the death rate per million of population from tuberculosis in all forms has undergone a marked decrease on the figures for the previous year. This will be seen in Graphs 1 and 2. Reference to graph 1 will also show that, with minor fluctuations, the decline has been practically continuous for the last 45 years and has been remarkably uniform.

Institutional Accommodation.—The list below shows the number of institutional beds at present available for the treatment of tuberculosis patients. This list and the following instructions regarding admission should prove useful to medical practitioners.

TABLE 6.—Institutional Accommodation.

Sanatoria and Hospitals.	Type of Cases Received.	Number of Beds.		
		Males.	Females.	Total.
1. Waterfall Sanatorium (under Government control)	Intermediate	293	124	417
2. Randwick Auxiliary Hospital (under Government control)	Late	60	30	90
3. Queen Victoria Homes (subsidised)—				
Thirlmere	Early female .....	...	54	54
Wentworth Falls	Early male	54	...	54
4. Red Cross Society (subsidised)—				
“Bodington” at Wentworth Falls	Early male and female ...	...	...	98
“Malahide” at Pennant Hills	Late male and female.....	...	...	21
“Southern” at Exeter	Male quiescent	20	...	20
(The above institutions work in full co-operation with the Tuberculosis Division.)				
R. T. Hall Sanatorium .....	.....	8	8	16
Private Hospitals (approximately) .....	.....	...	...	40
Repatriation Department—				
Prince of Wales Hospital .....	.....	65	...	65
Lady Davidson Home .....	.....	77	...	77
				952

Admission to Institutions Nos. 1 to 4 on the above list is arranged by application to the Director, Tuberculosis Division, 5 Richmond Terrace, Domain, Sydney. Applicants for admission to sanatoria apply personally at this office between 9 and 12, Monday to Friday inclusive, bringing with them a note

from their medical adviser giving the clinical findings and the results of sputum and X-ray examinations. The Board of Control of the Campaign against Tuberculosis requires that no patient shall be admitted to a sanatorium unless either sputum or X-ray examinations gives a positive result.

Country cases are also admitted to sanatoria on application to the Director, Tuberculosis Division. It is considered that hopeless cases resident in the country should be cared for in their local hospitals. Country patients suitable for admission to sanatoria are required to fulfil the following conditions:—

They should have (a) result of sputum examination; (b) result of X-ray examination where possible; (c) a reasonable prospect of arrest of the disease; (d) not need to be provided with an escort except in the case of children; (e) be afebrile for at least a fortnight prior to removal.

Application forms for the admission of country patients to sanatoria can be obtained at the office of the Director, Tuberculosis Division.

Sanatoria.—Good use has been made of these institutions and satisfactory results obtained.

The Red Cross Sanatorium “Bodington” and the two Queen Victoria Homes are for patients suffering from the disease in its early stages, but this term “early” has to be interpreted rather liberally owing to the type of cases coming forward despite the activities of the dispensaries in the way of examining contacts and suspects.

Waterfall Sanatorium is reserved for male and female cases who are in an intermediate stage of the disease.

The Red Cross Convalescent Home at Exeter is for those patients who have responded well to sanatorium treatment and who will probably be fit to resume their civil occupation in about six months time. Each patient is there allotted occupation commensurate with his physical state, and so gradually fitted to return to normal conditions. The results to date have been very satisfactory.

All the sanatoria carry out the same stereotyped treatment by rest, fresh air and graduated walks; but there is no system of graduated work in any of them, although patients evincing an inclination to work receive every encouragement in that direction unless it be contra-indicated by the condition of the patient.

Arrangements have now been made whereby treatment by artificial pneumothorax in suitable cases can be carried out at Bodington and Waterfall Sanatorium. The X-ray plant installed at Waterfall has very materially helped in the work of that institution and enabled much more satisfactory investigations to be made both into the condition of patients on their admission and into their progress during their residence there. On account of the difficulty of obtaining resident medical officers, the Red Cross and the Queen Victoria sanatoria are looked after by visiting medical officers and though the work done by these officers is excellent, a resident medical officer is considered essential. Present circumstances seem, however, to preclude this.

The Board of Control has formulated and adopted a classification scheme for patients which now enables a table to be included in this report. (Full particulars of this scheme will be found in appendix A.)

TABLE 7.

	Queen Victoria Sanatorium, Wentworth Falls.	Queen Victoria Sanatorium, Thirlmere.	Red Cross Sanatorium, Wentworth Falls.	Waterfall Sanatorium.	Red Cross Hospital at Pennant Hills.	Coast Auxiliary Hospital, Randwick.	Red Cross Convalescent Home, Exeter.
1. Number of Patients in Institution on 1st Jan., 1930	51	51	73	372	15	78	14
2. Do admitted during 1930	62	68	103	487	34	360	45
3. Do discharged (including deaths) during 1930.	60	68	120	452	33	348	41
4. Do remaining in institution on 31st Dec., 1930.	54	51	56	407	16	90	18
5. Average daily number of beds occupied	50·2	48·2	62	389	16·9	84	16·45

TABLE 8.

Condition on Discharge.	Queen Victoria Sanatorium, Wentworth Falls.		Queen Victoria Sanatorium, Thirlmere.		Red Cross Sanatorium, Wentworth Falls.		Waterfall Sanatorium.		Red Cross Hospital, Pennant Hills.		Red Cross Convalescent Home, Exeter.	
	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.
1. Arrested (A.) .....	...	...	...	...	...	...	...	...	...	...	...	...
2. Quiescent (Q.).....	31	374	34	336·2	31	291	20	318	...	...	...	...
3. Much Improved (M.I.) ...	19	362	10	301·3	31	255	60	310	...	...	9	135·3
4. Improved (I.)	4	76	14	215·07	33	106	175	200	6	270·5	24	221·7
5. Stationery (S.)	4	18	5	88·2	13	93	31	15	9	214·3	4	179·0
6. Worse (W.)	2	124	5	111·0	11	203	63	304	2	83·0	4	90·0
7. Dead (D.) .....	...	...	...	...	1	35	103	348	16	170·8	...	...
Total	60	...	68	...	120	...	452	...	33	...	41	...

TABLE 9.

Condition on Admission.	Queen Victoria Sanatorium, Wentworth Falls.							Queen Victoria Sanatorium, Thirlmere.							Red Cross Sanatorium, Wentworth Falls.							Waterfall Sanatorium.							Red Cross Hospital, Pennant Hills.													
	Condition on Discharge.							Condition on Discharge.							Condition on Discharge.							Condition on Discharge.							Condition on Discharge.													
	A.	Q.	M.L.	I.	S.	W.	D.	Total.	A.	Q.	M.L.	I.	S.	W.	D.	Total.	A.	Q.	M.L.	I.	S.	W.	D.	Total.	A.	Q.	M.L.	I.	S.	W.	D.	Total.	A.	Q.	M.L.	I.	S.	W.	D.	Total.		
1T1	6		1					7	13	8	3	1				25	8		3	10	2			23				3				3										
2T1	16		4		3			23	14		2	2				18	15		16	13	3	2	1	50	4		10	13	2			29										
1T2	3		1					4	2		1	1		1		5	2		2					4		4	7	4	1			12										
2T2	5		11	4	1			21	1		1	1		1		4	3		3	1	3	1		11	8		16	29	1	2	2	58										
3T1			1					1	4							4	3			3	1	1		8	5		6	10	6	2		29										
3T2	1					1		2				5				5			7	6	3	7		23	3		18	92	112	19	22	165										
1T3														1		1																										
2T3												2	1	1		4												1	4		7	6	18									
3T3			1			1		2				1	1			2					1			1			2	20	10	33	73	138				6	9	2	16	33		

Hospital Cases.—These are treated at the Coast Hospital Auxiliary Hospital, Randwick, but the accommodation there (60 beds for males and 30 for females) is taxed to its utmost limits, and as a result several cases although more suitable for hospital treatment, have had to be accommodated at Waterfall Sanatorium.

Picton Lakes Village T. B. Settlement.—The settlement now consists of 32 buildings of which 19 are detached cottages for married patients and 2 hostels for single patients. The population totals 57, of which 17 are arrested cases of tuberculosis who have entered the Settlement in the usual course after sanatorium treatment; the balance being members of their families.

Good progress has been made in the Industrial Section, where every patient is called upon to do a certain amount of work for as many hours of the day as is compatible with his state of health, thus providing that necessary adjunct “Application of Mind.” This section has been responsible for the manufacture of approximately 500 toys and small articles of household furniture, the profits from the sale of which have gone to the patients concerned in the manufacture thereof.

Special attention is given to the children by the Matron and every child of school age in the Settlement attends the Buxton Public School, which is nearby.

Dispensaries.—A table showing the work of the various anti-tuberculosis dispensaries is given below.

At the present time there are only four dispensaries in the State. In his comprehensive report on Tuberculosis in Australia, the Commonwealth Director of Tuberculosis has expressed the opinion that there should be at least one anti-tuberculosis dispensary for every 300,000 of population. On these figures New South Wales would require eight dispensaries, an increase of four on the present number. Of these, one should be in Sydney and one in Broken Hill. The widely scattered nature of the country population of New South Wales, however, renders the decision as regards the best centres for the establishment of the other two extremely difficult.

By reference to Table No. 1 it will be noted that the number of notifications for the Broken Hill district was 156. This fact alone indicates the pressing need for the establishment of an anti-tuberculosis clinic there and also the necessity of at least one or more visiting nurses.

TABLE 10.—Comparative Statement of work carried out at the various Anti-Tuberculosis Dispensaries during a period of 12 months, 1929 and 1930.

	Royal Prince Alfred Hospital.		Royal North Shore Hospital.		National Association for the Prevention and Cure of Consumption.		Newcastle Throat and Chest Dispensary.	
	1 July, 1928 to 30 June, 1929.	1930.	1929.	1930.	1929.	1930.	1929.	1930.
1. Total number of persons who attended for examination	1,609	1,713	431	362	940	936	...	...
(a) First attendance during year	944	1,046	233	212	698	816	92	105
(b) Attended in previous years and reattended during year	665	667	198	150	242	120	...	...
2. Total number of attendances	5,726	5,933	1,085	1,116	3,860	4,255	385	603
3. Number of persons found tuberculous	...	814	...	56	...	109	...	...
4. Number of persons found not tuberculous	...	506	...	278	...	780	...	...
5. Number of persons where diagnosis is not yet completed	...	393	...	28	...	47	...	...
6. Number of contacts examined	477	975	68	161	320	418	...	16
7. Number of contacts found to be infected	...	75	...	5	...	12	...	...
8. Number of sputum examinations	594	499	112	196	476	748	51	44
9. Number of X-ray examinations	1,209	1,169	319	302	146	452	25	20
10. Number of nurses' visits	2,520	2,148	3,615	3,274	1,760	3,022	...	...
11. Number of Homes visited	1,091	1,001	280	302	320	477	...	...
12. Sent to Sanatoria	155	174	14	11	28	79	16	14
13. Sent to hospital	68	131	16	18	28	61	16	7
14. Sent to country	145	85	10	10	3	7	1	Nil.
15. Number of deaths recorded	62	96	13	12	19	33	...	...

Visiting.—In the Metropolitan area the visiting of tuberculous cases and their families is undertaken by the nurses of this Division and of the anti-tuberculosis dispensaries; in the Newcastle district by a nurse on the staff of the Medical Officer of Health.

The total number of visits made in 1930 to the homes of tuberculous patients was 11,878. Of these, 4,826 were made by nurses not attached to this Division and the remainder, 7,052, by departmental nurses. Of these 7,052 visits, 3,618 were to patients attending at anti-tuberculosis dispensaries and 3,434 to non-dispensary patients. To the homes of 1,780 patients attached to anti-tuberculosis dispensaries, 8,444 visits were made, an average of 4·7 visits per patient per year. To the 1,080 homes of non-dispensary patients, 3,434 visits were made an average of 3·1. The average number of visits made per patient per year for all patients is 4·1. It is thus seen that there is still much room for improvement in this direction; an improvement which can only be brought about by the appointment of additional visiting nurses.

Of the four departmental nurses, one assists at the anti-tuberculosis dispensary at Royal Prince Alfred Hospital, a second visits for the National Association for the Prevention and Cure of Consumption, and the remaining two visit non-dispensary patients. Such visiting as they may perform is obviously insufficient when the total number of patients is taken into consideration. Including the nurses of the anti-tuberculosis dispensaries, the total number of visiting nurses is nine for the whole of New South Wales, and the total number of living patients on the register of this Division is approximately 7,500. This gives an average of one nurse to over 800 patients. It would be impossible for the present staff of nurses to visit more than a small proportion of these cases. It is recognised that 300 patients is the greatest number that one visiting nurse can keep under adequate supervision, thus the nine nurses at present available could at the utmost, account for only 2,700 cases. Leaving nearly 5,000 cases uncared for.

The best means of teaching a patient how to care for himself and to protect others is by sending him to reside in a sanatorium for a time; the sanatorium-trained patient is usually, but not always, careful in his family circle, though he may overlook details. Such cases do not require to be visited very often. It is impossible, however, for many reasons, for all patients to be sanatorium-trained, those who have not passed through this routine are more difficult to educate and frequent visits and advice are necessary. It is for this reason also that an augmented staff of visiting nurses is necessary.

Board of Control of the Campaign against Tuberculosis.—It is with regret that I have to report the loss, through death, of the services of the late Russell Sinclair, O.B.E., Chairman of the Australian Red Cross Society. His interest and assistance was untiring and his loss is one which will be deeply felt by the members of the Board.

Dr. A. J. Collins has been nominated to succeed him as the representative of the Red Cross Society.

During 1930, the Board of Control met on five occasions. The previous policy of the Board has been continued, and many important aspects of the campaign have received consideration in the endeavour to improve the welfare of the tuberculous patient and his family and to generally combat the disease.

Although nothing can be definitely announced the Board is still hopeful that its efforts may be successful in bringing about important changes among which may be mentioned:—

1. Having the study of tuberculosis brought more prominently into the medical course at the Sydney University.
2. The establishment of preventoria.
3. Education in general hygiene, with special reference to tuberculosis.
4. The compulsory isolation of the criminally careless germ-spreading patient.
5. Control over boarding houses, hotels and week-end cottages, especially in places of popular resort.
6. The provision of a fund (estimated of £20,000 per annum) to be allocated for the maintenance of the family of the consumptive bread-winner.

Publicity.—During the year publicity work in connection with tuberculosis has been continued. This has taken the form of distribution of leaflets, display of models and posters during Health Week, and the broadcasting of instructive talks on the disease, its treatment, and the precautions to be taken to avoid infection; it is probable that many persons have been reached by this means who could not otherwise have been got into contact with. A local film has been prepared for use in the campaign against tuberculosis and was shown continuously during Health Week in a shop window in the heart of the city as well as being shown at a picture theatre. Several lecturettes were also given on this latter occasion. This film should be most useful in educating the general public and securing their active co-operation in the fight against this wasteful disease.

Urgent Requirements.—In reviewing the work of the year the following appear to be the more important requirements in furtherance of the campaign against tuberculosis:—

1. Two more visiting nurses, to more effectively cope with the work in the metropolitan area.
2. A clinic in the Western Suburbs which could serve both the Liverpool and Parramatta districts. Also a clinic at Broken Hill.
3. The establishment of preventoria. These are homes for undernourished children, and their purpose is to prevent the effects of poor health and unhygienic conditions in childhood from manifesting themselves in later years.
4. Suitable accommodation for patients who are not in an early enough stage to warrant their admission to the Queen Victoria Homes, and who are not in a position to pay more than from one to two guineas per week for their maintenance.

Thanks are due to the members of the Board of Control and to the various hospitals, associations, and other agencies which have actively co-operated with this Division throughout the year.

APPENDIX "A."

SCHEME FOR THE CLASSIFICATION OF TUBERCULOUS PATIENTS.
(Formulated by Board of Control of the Campaign against Tuberculosis.)

On First Examination.

The extent of the lung lesion as determined by clinical findings to be denoted by the symbols L1, L2 and L3.

The Toxicity or degree of systemic effect to be denoted by the symbols T1, T2 and T3.

The extent of the lesion as determined radiographically to be denoted by the symbols R1, R2 and R3.

Definitions.—L1.—Lesion of slight severity affecting at most the apices of both lungs not lower than the spine of the scapula and the clavicle on each side or the apex of one lung not lower than the second rib in the front and the spine of the scapula behind, or an equivalent area in any one lobe.

L2.—Lesion of slight severity more extensive than L1, but affecting at most the volume of one lobe, or severe disease extending at most to the volume of one half lobe.

L3.—Lesion of slight severity more extensive than the volume of one lobe; severe lesion more extensive than the volume of one half lobe.

NOTE.—By lesion of slight severity is to be understood disseminated foci of infiltration or slight fibrosis; by severe lesion, consolidation, excavation or dense fibrosis—in each case as indicated by the obvious physical signs. A small area of dry pleurisy should not exclude a case from L1.

For the purpose of classification, the right upper and middle lobes are to rank as one lobe.

T1.—Constitutional disturbance absent or slight, as judged mainly by the temperature, pulse-rate and effect on nutrition and strength.

For example, temperature after an hour's rest should rarely exceed 99 degrees in the mouth at maximum or, if higher, should be reducible to the lower figure by a week's rest in bed. Pulse rate after an hour's rest should rarely exceed 90.

T3.—Severe constitutional disturbance or deterioration; one or more symptoms present in severe degree. For example, temperature during rest at the maximum persistently over 100·8 in the mouth, or 101·3 in the rectum; pulse-rate during rest persistently over 96. All cases with severe complications whether tuberculous or not, fall in this grade.

T2.—All cases intermediate between T1 and T3.

NOTE.—Rectal temperatures are preferable; when mouth temperatures are used, the thermometer should be kept in the closed mouth for at least 5 minutes. In the case of women, add to the temperature limits given 0·6 degrees for the premenstrual rise which may normally occur.

R1, R2 and R3 to be expressed on the basis of the same definitions as for the clinical findings, i.e., L1, L2 and L3.

The presence of tubercle bacilli in the sputum at any time to be denoted by the symbol B+. If tubercle bacilli have never been demonstrated in the sputum at any time the symbol B— to be used.

On Subsequent Observation.

A. Arrested.—A case should not be classed as arrested until it has been quiescent two years. Sputum to be free on at least three consecutive occasions at intervals of one week prior to discharge.

Q. Quiescent.—I.e., no symptoms of tuberculosis and no signs of tuberculosis except such as are compatible with a completely healed lesion and in which the sputum, if present, is free from tubercle bacilli.

M.I. Much Improved.—I.e., the condition is not quiescent but (i) the general health is good, (ii) the signs and symptoms of tuberculosis are materially diminished, (iii) working capacity is more or less restored.

S.—Stationary. W.—Worse. D.—Dead.

Subsequently the Board decided on the following standards to be adopted by the Examining Medical Officers for the various institutions with regard to the suitability of applicants for admission:—

L1T1, L2T1.—Early case, suitable for Queen Victoria Homes or Bodington.

L1T2.—To be kept under observation in bed for 14 days—if marked improvement, suitable Queen Victoria Homes or Bodington; if no improvement, suitable for Waterfall; if retrogression, suitable for Hospital.

L2T2, L3T1, L3T2.—Intermediate case, suitable for Waterfall.

L1T3, L2T3, L3T3.—Advanced case, suitable for Hospital.

SECTION I.—E. DIVISION OF INDUSTRIAL HYGIENE.

REPORT OF THE MEDICAL OFFICER OF INDUSTRIAL HYGIENE FOR THE YEAR ENDED
31st DECEMBER, 1930.

Staff.—Medical Officer of Industrial Hygiene, CHARLES BADHAM, B.Sc., M.B., CH.M., D.P.H.; Physicist Assistant, H. E. RAYNER, B.Sc.; Engineer Assistant, H. D. BROOSE, B.E.

This Division undertakes the investigation of hazards to health in factories, mines, and industry generally; the ventilation of theatres, cinemas, and other places; the examination of factory children; and the diagnosis of cases of occupational disease.

THE INTERNATIONAL SILICOSIS CONFERENCE, JOHANNESBURG.

During the year I attended the International Silicosis Conference at Johannesburg in August as the Australian nominee of the International Labour Office of the League of Nations, which body provided for my travelling expenses. I have written an account of this Conference which appeared in the *Journal of Industrial Hygiene*, May, 1931.

The reports of the International Silicosis Conference already printed and in the hands of delegates and others, formed the basis of the work of the Conference and when these are published along with the précis of the discussions, the reports of the reporters of the various sections and the resolutions adopted by the Conference, they will reveal not only the present state of our knowledge of dust diseases of the lungs, but also the excellent staff work of the International Labour Office and its division of Industrial Hygiene.

One thing that reflects credit on those concerned was the choice of the terrain for the Conference—for a conference elsewhere than Johannesburg would have been poorly placed. The suggestion for the Johannesburg Conference came from Mr. Gemmell, the General Manager of the Chamber of Mines, and a South African delegate to the International Labour Conference in Geneva. The Chamber of Mines offered munificent monetary help.

The Miners' Phthisis Medical Bureau gave its wholehearted aid and Dr. Louis C. Irvine, its distinguished Chairman and Chairman of the Conference, would gladly teach, nor did he tire and by his full demonstrations in the Bureau, earned the gratitude of all delegates, while his personal charm in the chair aided the smooth running of the Conference.

The very able services of Dr. Orenstein, C.M.G., organised the comfort and transport of the Conference and opened up for inspection the many sides of the industrial activity of the Rand. On his shoulders fell the mantle of Gorgas and after eight years in Panama he came to South Africa which is fortunate to have him.

The International Labour Office was represented by Mr. Phelan of its Diplomatic Section and Dr. Carozzi, two of its highly skilled officers, whose aid in bringing the Conference to a successful conclusion was of the greatest value. All delegates owe a debt of thanks to the International Labour Office for the initiation and opportunity of attending this Conference.

A scheme which was novel to many medical delegates was the appointment of reporters of the various sections. Their duty was to record the sense of the discussions in the sections and to submit, along with their report, recommendations to the Conference, for its approval. This procedure is that adopted by the League of Nations Conferences and the report of the reporters is accepted, modified or rejected, while recommendations have a similar destiny. A modification was introduced at the Silicosis Conference for the reports, and the recommendations were, after discussion by the Conference, amended and the reporters agreed to accept the modified reports and recommendations as representing sufficiently well their own views. That such a compromise was possible among representatives of many nations thinking of diverse industrial undertakings and local conditions, was, I think due to the high level of medical knowledge of industrial diseases of the lungs possessed by the delegates.

OPENING OF CONFERENCE.

The official opening of the Conference was performed by the Honourable, the Minister of Post and Telegraphs, Mr. H. S. Sampson, O.B.E. Mr. Sampson said that:—

“The presence here of experts from so many lands, is a signal proof of that international fellowship in scientific investigation and research which over-rides all national boundaries and affords so hopeful a manifestation of that growing international spirit which the International Labour Organisation embodies.”

Mr. Phelan of the International Labour Office, Geneva, who was elected Chairman of the opening session of the Conference, gave an interesting review of the work of the International Labour Organisation. In explaining why the Conference had been called, and what it was expected to do, he said—

“The International Labour Office has the widest possible programme. This is laid down in the preamble to the Peace Treaties, and includes a specific reference to industrial diseases.

“One section of the office is devoted to that study. Dr. L. Carozzi, a delegate to this gathering, has been at its head for the last ten years, and in that time, by his energy, vision and intelligence he has built up an unique organisation, a network of experts and technicians all over the world with whom he is in constant touch. This network covers also units outside the League, such as the United States, Russia and Mexico. Every three or four months he publishes a bibliography of new studies on industrial hygiene, and in this way makes available between 2,000 and 3,000 references a year, enabling inquirers into industrial diseases to keep abreast of work being done elsewhere.

"Dr. Carozzi has partly completed the compilation of an encyclopaedia of industrial diseases, the first volume which will appear shortly, extends to 1,250 pages. Such is the organisation that lies at the origin at this conference.

"The International Labour Office does not work only on paper, the chairman proceeded. It attempts also to get direct experience of the problems with which we are dealing. Three years ago Dr. Butler, of the International Labour Office, while visiting this country to study labour problems, conversed in Johannesburg with Mr. W. Gemmell, of the Chamber of Mines, and Dr. A. J. Orenstein, and through them discovered the amazingly valuable collection of data on silicosis that you have here. He thought it would be of interest to other Governments, and might enable scientists of other countries to profit by the knowledge gained in South Africa.

"Out of these conversations arose the present conference to discuss the medical aspects of silicosis and its prevention. The project was approved by the International Labour Organisation; it would have been difficult to carry out but for the generosity of the Chamber of Mines and the facilities afforded by the Union Government.

"This conference is perhaps more remarkable than any other body of expert opinion that has ever met to discuss industrial diseases. It is remarkable also because it will not spend 99 per cent. of its time discussing purely European problems. The solution of the problems it will discuss are of direct interest to more distant countries. It is not fair to say that the League is concerned only with European matters. It is not an international dictator, nor a super-state, nor some Martian body deciding what is good for other lands. It is not different from the members that compose it. It does what a Parliament would do when a majority decides on a particular course."

At the first business session held on the same afternoon, Dr. Irvine, of the Miners' Phthisis Bureau, was elected Chairman of the Conference and the election of members of the Resolution Committee and of the reporters was proceeded with.

SPECIAL DEMONSTRATIONS.

The demonstrations of dust sampling, mining conditions, milling, medical examinations of natives, native hospitals and compounds were of particular interest and value to the delegates.

The aid which Dr. Irvine and the Miners' Phthisis Bureau gave the visiting delegates has been stressed and we were also greatly indebted to Sir Spencer Lister, the Director of the South African Institute for Medical Research, and particularly Dr. Mavrogordato, Fellow in Industrial Hygiene, and Doctors Strachan and Simson, Pathologists of the Institute.

Dr. Girdwood and his colleagues of the Native Labour Medical Service demonstrated their particularly able and interesting work in the medical examination of natives.

Every delegate was indebted to the Chamber of Mines for many and varied services, particularly to Mr. Gemmell, the General Manager, and its technical officers, Mr. F. G. A. Roberts, Mr. A. F. McEwan, and Mr. Thompson.

HOSPITALITY.

The traditional hospitality of our South African colleagues and the generosity of the South African Government, the Municipality of Johannesburg and the Chamber of Mines were very much appreciated by the delegates.

BENEFITS FROM THE CONFERENCE.

The published proceedings of the Conference will reveal our knowledge of one of the chief industrial diseases as well as our ignorance of many things relating to its causation and prevention.

These proceedings will probably remain for many years the standard volumes of reference on silicosis and other dust diseases of the lungs. However, these evidences of things done, these careful records of facts, opinions and experiences, will not constitute the chief blessings from the Conference.

It is the great stimulus for further work which we have all received from personal contact with our international colleagues that must make our work of research in causation and prevention prosper.

From many countries those interested in the prevention of dust diseases of the lungs have come into personal touch, and there has been created a nexus from this meeting which promises a widespread application of approved methods for the study and prevention of these diseases.

FIBROSIS OF THE LUNGS IN SOUTH COAST COAL-MINERS, NEW SOUTH WALES.

The report on the examination of South Coast coal-miners which was conducted in conjunction with the Commonwealth Division of Industrial Hygiene has been published in *Health*, the journal of the Commonwealth Department of Health for May, 1931.

This report followed on the International Silicosis Conference, where the authors had an opportunity of exhibiting the radiographs of these miners and discussing them with experts of many nations.

A summary of this report states:—

"At the request of the Royal Commission on the Coal Industry in New South Wales (1929), a radiographic examination was made of the chests of a number of coal-miners and a clinical examination of a smaller number.

"A fine type of fibrosis of the lungs, varying in degree from slight to marked, was found to be present in 122 of 471 (25.9 per cent.) coal-miners examined, and the incidence among men who had worked on the South Coast coal-field only was 25.0 per cent.

"This radiographic fibrosis was considered to be complicated by infectious processes in 49 of the 122 cases.

"Radiographic appearances of tuberculosis in the form of an acute lesion, a latent process, or an old scar, were found in 24 or 5.1 per cent. of the 471 men examined.

"It is concluded from the radiographic findings that a fibrosis of the lungs may be caused by working in coal-mines of the South Coast, that the onset is slower and the disability less marked than from the disease produced in metalliferous mines, and that the estimation of disability must depend less on radiographic findings than on clinical examination. This fibrosis of coal-miners should be placed on a sound pathological and chemical basis."

A comprehensive plan of work has been drawn up by my division to proceed with the investigation of the fibrosis of coal-miners, and to attack the problem from three points:—

1. Pathological and chemical study of the lungs of coal-miners.
2. The dust exposure of coal-miners.
3. The action of dusts found in coal-mines on animals, with special reference to the reactivation of tuberculosis.

The pathological work consists in the examination of the lungs of coal miners and the chemical estimation of the dusts found therein, along the lines of the work proceeding in England and Wales by Professor S. Lyle Cummins, of the Welsh National School of Medicine, and Professor Wheeler, of the Safety in Mines Research Board.

The dust exposure in coal-mines is being estimated by dust sampling, which promises to give useful data in this subject in which very little work has been done elsewhere.

The effect of dusts found in coal-mines on the lungs of animals, with special reference to the production of fibrosis and the reactivation of latent or healing tuberculosis, is being studied in a large scale series of experiments, which the Department of Mines has facilitated and aided in a practical manner by providing rooms and material. It is hoped in this work to apply certain of the methods which have aided Gardner, of Saranac Laboratory, in his outstanding work on the effects of various dusts in reactivating healing tuberculosis.

BAKERS' DERMATITIS IN NEW SOUTH WALES.

The investigation into the cause of the outbreak of dermatitis amongst doughmakers in 1929-30 has been completed, and a monograph dealing with this subject appears in this report as No. 16 of our Series of Studies in Industrial Hygiene (page 71).

HEALTH HAZARDS IN THE LEAD INDUSTRY.

The examination of suspected cases of lead poisoning has continued. In the accumulator factories the number of cases seen was below the average of previous years, and this is attributable to broken employment caused by the present industrial conditions, medical supervision of the two largest factories, and a gradual improvement in the practice of hygiene in the industry.

One of the smaller factories, the working conditions of which I had previously condemned, had three severe cases of lead poisoning within a few weeks. Little attempt had been made to reduce the lead dust in the air, and I once more stress my recommendation of weekly inspections of accumulator factories by an officer with a special knowledge of the hygiene of the trade.

The use of an oxy-acetylene flame on painted ironwork in breaking up obsolete warships was responsible for the most severe case seen during the year. This man had been engaged on this work for three years, and had had symptoms of lead poisoning two years earlier, at which time he was off work for nine weeks.

Four cases of lead poisoning came from men employed painting the steel members of the Sydney Harbour Bridge, and one painter was engaged cleaning the old paint from a railway bridge with a percussion tool. There is need to make it known widely that percussive processes for the removal of old paint are distinctly dangerous to health.

An investigation of a process new to Australia, the making of continuous length of hose which is covered by lead before curing, showed that 80 per cent. of the men employed had minor degrees of basophilic stippling of red cells, showing a lead intake by these individuals. Lead poisoning had occurred in this process in America, and the management asked for advice to prevent danger in the Sydney works. The general hygiene of this section of the works was excellent, and a regular medical inspection of the men engaged was established.

ARSENICAL POISONING.

A man employed in the manufacture of arsenate of lead had lead and arsenic poisoning. Two weeks after leaving work the arsenic in hair was 5 mgms. per 100 grams. of hair. Several other cases of arsenical poisoning were reported—one man was engaged spraying blackberries with an arsenic preparation. His hair showed 2.85 mgms. of arsenic per 100 grams., and his nails 24.0 mgms. per 100 grams.

DUST SAMPLING.

Routine dust sampling in the tunnels under construction of the city railways has been intermittent owing to a diminution of activity in these works.

The working conditions in a stone-crushing and mixer-house at Woronora Dam were reported on at the request of the Department of Labour and Industry. At the time of inspection under favourable weather conditions the dust sampling did not reveal any undue hazard, and reconstruction of these works did not permit of further testing under the original conditions.

At the request of the Minister for Mines dust sampling was carried out in two northern collieries to determine the exposure during the practice of stone dusting at the face before shot firing. Gravimetric samples were taken with a Greenburg-Smith impinger, and particulate counting with an Owens' dust instrument. This sampling showed the necessity for a more detailed study of the dust in the air of

collieries. The proportion of large relatively innocuous particles appears much greater in coal dust than in dust from other minerals. It is hoped to be able to practice a form of selective counting with Owens' instrument similar to that which we have worked out for sandstone industries, for it appears that we will be able to separate coal (carbon) from other dust particles by such a method.

THE INDUSTRIAL HAZARDS IN HANDLING SODA ASH.

Recently, at the request of the Deputy-Registrar of the Federal Arbitration Court, I investigated the hazards from handling soda ash in unloading ships and at the Australian Glass Works. I reported as follows:—

"I inspected labourers engaged in working a cargo of bagged soda ash in the s.s. "Cape St. Columba" and at the wharf sheds and the Australian Glass Works on 4th February, 1931. Soda ash is composed of about 98 per cent. anhydrous sodium carbonate, which is an alkali.

"In solution this alkali has a definite action on the skin, and produces rashes and superficial ulcers, particularly in individuals with a skin that is easily hurt by chemicals or other irritants. The powder is without action until it is put in solution by the sweat of the skin or serum secreted by small scratches or abrasions.

"Rubbing of the healthy or abraded skin against a bag is an essential for the production of a lesion among these workers.

"About 25 per cent. of the men employed in the ship's hold and on the wharves showed the stigmata of skin ulceration caused by handling soda ash in bags.

"I found that the typical lesion is a superficial ulcer over the dorsum of the metacarpal of the thumb and forefinger of the left hand, it is caused by the rubbing of these parts on the bag of ash when pulling it by the ear with the left hand, while the hook held in the right hand keeps this hand from rubbing against the bag.

"I saw one man with conjunctivitis.

In the Glass Company's sheds, where a different mode of handling was practiced, I only saw one man with a small area of superficial ulceration on the left hand, and inquiry did not reveal any other complaint of disability resulting from handling soda ash in these sheds. Men who are affected by these skin lesions should wear cotton gloves."

A further report was made to an interested body as follows:—

Possibility of Soda Ash Causing or Aggravating Pulmonary Tuberculosis.

"There is no record in the literature of Industrial Medicine of the inhalation of soda ash causing or aggravating tuberculosis. It has been suggested that soda ash may accentuate the action of free silica when inhaled along with it by putting the silica into solution. Reports on the alkali industry do not show any special hazard from the inhalation of associated dusts.

"At the present time there is no evidence concerning the effect of soda ash on the lungs. I will bear this dust in mind and test out its effects on tuberculous guinea pigs in a large series of experiments for which I am preparing the dust-testing rooms in our new laboratory, but I cannot gain the information required for many months, as experiments concerning the dusts in coal mines must be carried out first."

HANDLING OF BULK WHEAT.

At the request of the Deputy-Registrar of the Federal Arbitration Court the process of bulk loading of wheat from the silos into ships' holds was investigated and the following report made:—

"On January 6th I inspected two holds of the s.s. "Brighton" which was loading bulk wheat at the silos at White Bay.

"I found that the exposure to dust from the wheat depended on the degree of ventilation of the holds. In the first hold where the feeder wheat had been trimmed and the air passages to the hold were many, little dust was present and the irritant effect from the dust was not noticeable, but in a hold in which there were no air passages and the feeder wheat had not been trimmed, the discomfort from the inhalation of the irritant dust was marked. This dust was found, under the microscope, to consist of vegetable hairs and cells, starch grains and fungus spores. Chemical analysis showed this dust to contain 3 per cent. free silica or intractable silicates.

"This dust is very irritating to the respiratory tract. Probably this action is caused chiefly by the numerous fine hairs. A short exposure in the dustiest hold produced an inflammation of my throat.

"All dusts are harmful to the lungs if inhaled in sufficient quantity, but certain dusts which are irritant cause or aggravate bronchitis and other inflammatory conditions of the lungs.

"There is very little definite evidence that this dust aggravates an existing tuberculosis or incites a quiescent condition of tuberculosis, but this latter function is one common to many dusts containing or not containing free silica, and it is only reasonable to suppose that a dust which irritates the respiratory tract will aggravate tuberculosis if present.

"It will be very difficult to prevent exposure to dust in the holds, but a more efficient mask could be worn than the one which I have seen in use. Men loading from silo conveyors should wear goggles also."

PYRETHRUM DERMATITIS.

An outbreak of dermatitis due to Pyrethrum used in the manufacture of kerosene fly killer occurred in a drug warehouse. The Pyrethrum ground consisted of several species of Japanese chrysanthemum, and is a well known cause of dermatitis among susceptible individuals exposed to the dust.

The essential preventive measure is to devise trade processes which will eliminate exposure of workers to Pyrethrum dust. My division offered to test individuals to determine susceptibility.

DERMATITIS IN THE RUBBER INDUSTRY.

No marked incidence of dermatitis occurred in this industry, but there were several cases of petrol dermatitis due to keeping the hands wet with petrol while using shoe solutions and in the process of slicking in motor tyre manufacture.

VENTILATION.

The routine examination of the ventilation of cinemas and theatres has continued. From this work nothing has emerged to make us doubt the soundness of our requirements laid down for theatre ventilation in our Studies in Industrial Hygiene No. 10. It is to be regretted that the regulations for theatre ventilation have not been recast. However, the recently constructed theatres have fulfilled the conditions we have aimed at. I am not prepared to certify that a theatre is sufficiently ventilated unless it has a degree of air movement such as has been indicated by our work as necessary for comfort.

Basement shops have received our attention. Of one of these it was reported—"the discomfort that is felt in this store comes from the low air movement. The air movement found was less than 8 feet per minute. I would require about 180 feet for comfort. The temperature of the store at 1.30 p.m. was 83 degrees F., which was 14 degrees below the outside temperature of 97 degrees F. The amount of CO₂ present shows a reasonable air change. The conditions to-day were better than on my previous visits on 22nd December, 1930, and 10th January, 1931."

I have advised (January, 1931) that the air movement as required by me for theatres should be enforced for basement shops.

REFRIGERATION.

At the instigation of this Division the Standards Association of Australia has undertaken the formulation of a safety code for the control of refrigeration. Mr. Broose and I are members of the Committee engaged with representatives of various interests in drafting a code.

Studies in Industrial Hygiene, No. 16.

Bakers' Dermatitis from Activators containing Persulphates.

By CHARLES BADHAM, B.Sc., M.B., D.P.H., Medical Officer of Industrial Hygiene.

INTRODUCTION.

The recent outbreak of dermatitis among bakers in New South Wales affords a very interesting example in industrial medicine of adverse effects arising from the introduction of small quantities of a particular chemical to a compound in common use. Such chemicals are generally added following the advice of chemists, with their minds focussed on the toxicity of the substance, that they are not objectionable. That these substances may produce severe cutaneous reactions is often overlooked, and this has occurred in our rubber mills when an offending activator Hex (hexamethylene-tetramine, urotropin) was replaced by the more obnoxious B.B. (paraphenylene-diamine). When the dermatitis continued in this industry the conclusion was then formed by the chemists interested that hexamethylene-tetramine was not responsible for the earlier cases of dermatitis.

The outbreak of dermatitis among the bakers of New South Wales began within a few months of the introduction—in March, 1929—of potassium or ammonium persulphate to the activators (accelerators or yeast foods) used in dough making. These compounds are generally composed of a base of wheat malt flour and chloride of ammonium, 2 to 3 per cent. of persulphate being added to this mixture. The outbreak of dermatitis continued while the persulphate was used and rapidly subsided—in October, 1930—when it was no longer added to the activators.

Cases of dermatitis are still seen, however, but these are chiefly relicts of the original outbreak, bakers with chronic eczema as a sequela of the original dermatitis.

There are still seen cases of dough makers sensitive to flour and complaining of asthmatical attacks but giving no skin reaction to persulphate. Cases still occur among bakers of the fungal skin disease, diagnosed locally as dermatitis due to *Epidermophyton* (species) or as, and probably not so accurately, *tinea albigena*. One or two cases of dermatitis which have occurred since October, 1930, were so typical and gave such definite skin reactions to persulphate that the surreptitious use of this chemical seemed evident, and an inquiry revealed that an attempt was being made to use activators containing persulphate in machine baking, as it was contended that the arms of the men would not come into touch with persulphate in solution, but I am satisfied that its use was not confined to machine baking.

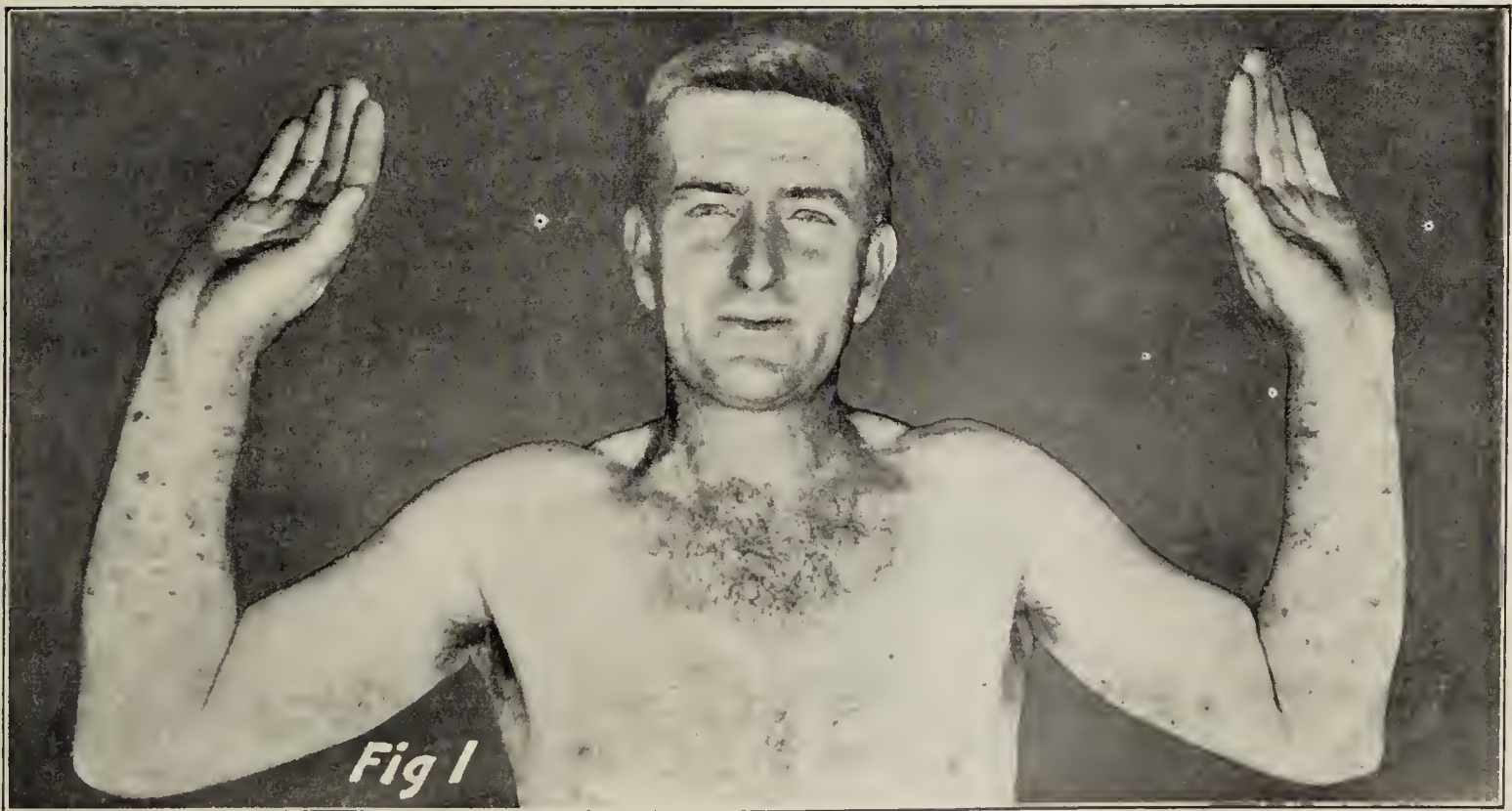


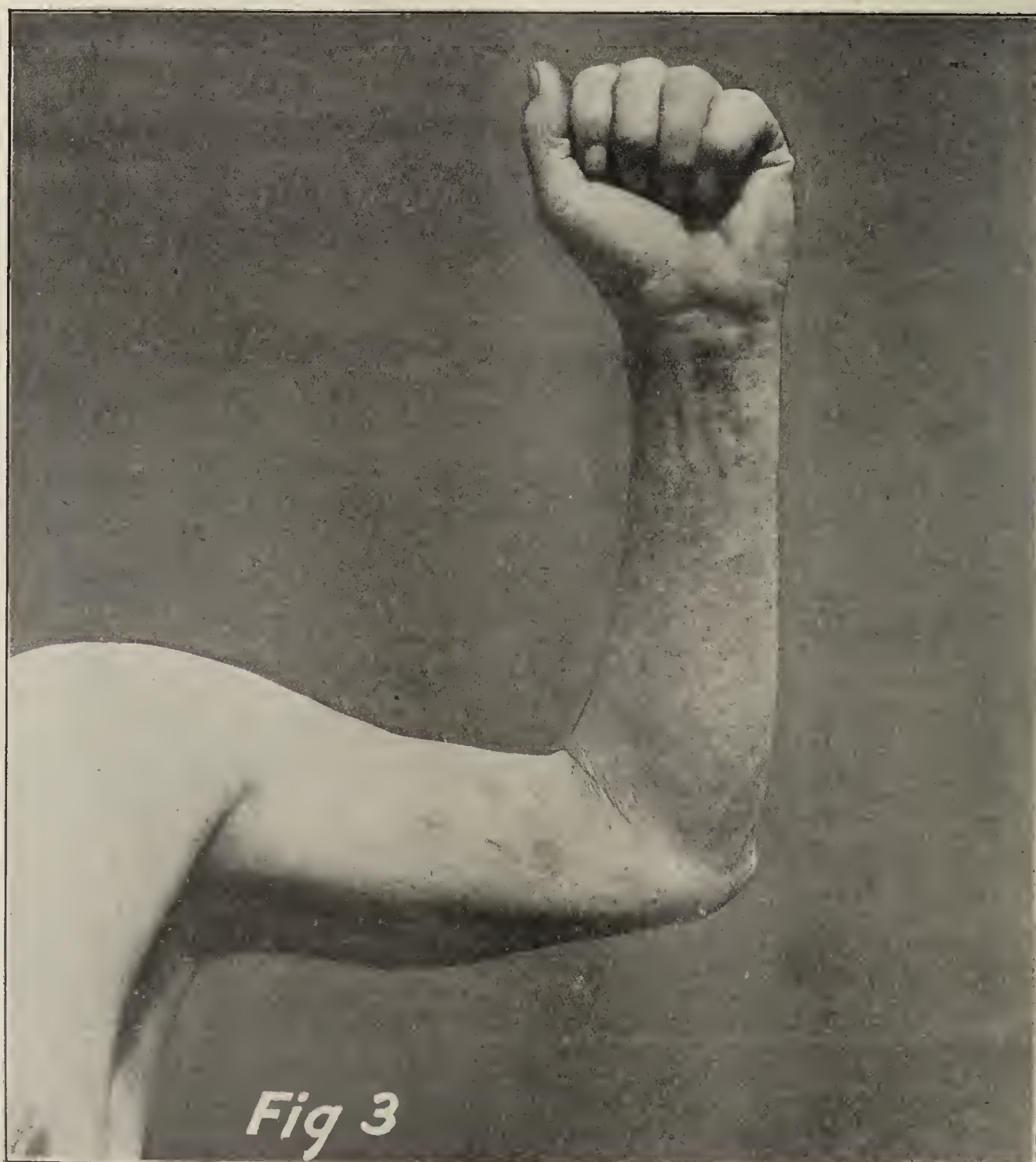
Figure 1.

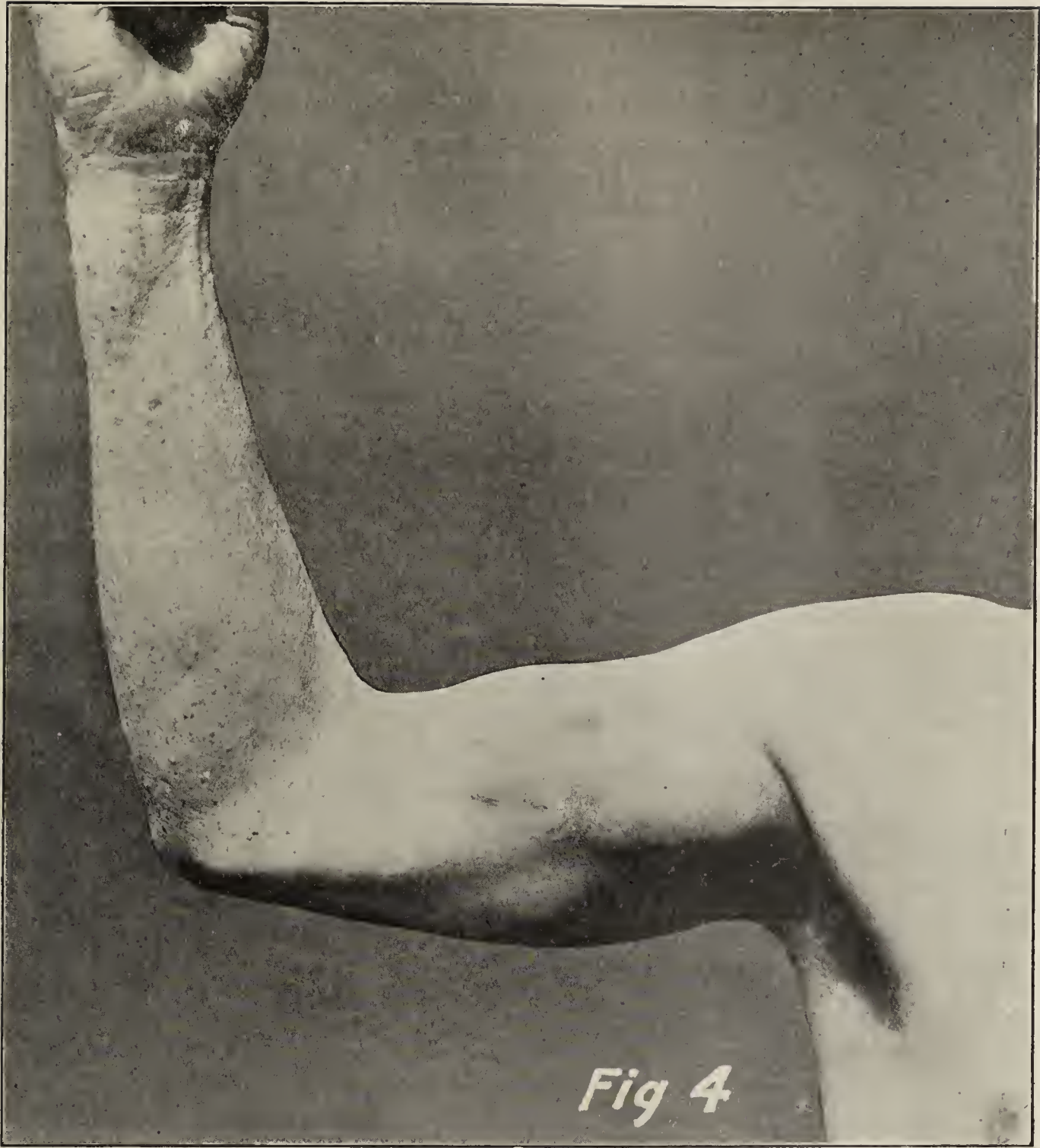
Photograph of a dough maker, aged 39. Case No. 1. Taken March 21st, 1930.

He had been affected by dermatitis of hands, forearms, arms, neck, feet, on two occasions previously. The affection depicted had developed a fortnight after return to work, and he had left work on this day. He resumed nine weeks later. Skin tests November and December, 1929, showed very marked reactions to persulphate, wheat malt flour, and wheat flour.



Figure 2.
Right forearm. Case No. 1 showing character of dermatitis.





Figures 3 and 4.

Photographs right and left upper limbs of a dough maker, aged 43. Case No. 9, taken April 1st, 1930.

Suffering for the fourth time from dermatitis. Previous attacks had incapacitated him for 21 weeks in last 26 weeks. Present attack came on after one day's work following incapacity for 9 weeks. He had been tested on the left arm on the day prior to the photograph. Next day the ammonium persulphate test still showed a marked wheal and erythema and an area of vesiculation had developed in relation to it.

On the right arm he was tested about an hour before photographing, and the tests of the two activators containing persulphates still show marked reaction.

Left Arm, List of Substances Tested and Reactions of Previous Day.

	<i>Medial Line Reading Proximal to Distal.</i>	
	Wheal.	Erythema.
Wheat flour	++	+
Activator No. 1	+++	+
Malt flour	++	+
Ammonium persulphate	+++	+

	<i>Lateral Line Reading Proximal to Distal.</i>	
	Wheal.	Erythema.
Control	—	—
Treacle.....	$\frac{1}{2}$ +	$\frac{1}{2}$ +
Activator No. 1	++	++

Right Arm, List of Substances Tested Shortly before Photographing.

	<i>Medial Line Proximal to Distal.</i>	
	Wheal.	Erythema.
Wheat flour	+++	+
Activator No. 1	++	+
Control	—	—
Nitric acid 1 per cent.	$\frac{1}{2}$ +	—

	<i>Lateral Line Proximal to Distal.</i>	
	Wheal.	Erythema.
Wheat flour	++	+
Activator No. 2	++	+
Malt flour	+++	+
Sulphuric acid 1 per cent.	$\frac{1}{2}$ +	—

In the investigation of this outbreak very little information could be got from the reports from other countries. Prosser White has written of the irritant nature of the persulphate and other oxidisers but has exculpated these chemicals when mixed with flour to form dough,* and Tankard† noted that the use of persulphates in Hull in 1913 coincided with an outbreak of dermatitis.

In our experience the chief irritation came from the liquid in which the activators or yeast foods were mixed before the dough was made. In some cases this dermatitis, as seen in New South Wales, has been complicated by associated conditions arising apparently as sequelæ, but in general with the removal of the irritant the dermatitis has disappeared and there has been no recurrence—a characteristic of occupational skin inflammation.

INCIDENCE.

Before 1929 dermatitis among bakers considered due to their occupation was practically unknown. Several claims had been made before the Workers' Compensation Commission in 1928, but these had not been thoroughly investigated. From June, 1929, till August, 1930, cases occurred in each month—in all forty-eight claims are known to have been made on Insurance Companies interested—the city and country providing equal numbers. In addition there were twelve claims for recurrences in the same period. Master bakers working in their own bakeries have been affected, but their number is unknown as they are not insured.

Those affected have been engaged at least part of their time as dough-makers, and in this process immersion of arms in liquid in which activators or yeast foods are present occurs. Probably over 1,000 dough-makers have been exposed to the irritant persulphates and perhaps 1 in 20 of the men so exposed has developed dermatitis.

No seasonal incidence has been noted in this recent outbreak which differs in this respect from the effect of activators such as hexamethylene-tetramine and paraphenylene-diamine in the rubber industry.

DESCRIPTION OF THE DERMATITIS.

The rash consisted of dermatitis which varied in degree in different individuals. The milder cases when first seen, showed the erythematous or erythematopapular stage, and the more acute cases were erythematovesicular or characterised by exudation and crust formation. In some cases the rash was impetiginised by pyogenic infection.

The distribution was in most cases on the exposed parts, viz., the dorsal aspect of hands, and the flexor aspect of wrists and forearms. In other cases the rash also occurred on the extensor aspect of forearms and the face and neck, and in some cases the lower abdomen, thighs and upper arms were affected.

The incapacity of dough-makers affected varied from weeks to months. While the persulphate remained in use a recurrence of the disease resulted when an affected baker returned to this work.

Both blonde and brunette types of individuals were affected in this outbreak; the blonde type seemed to fare worse.

SKIN REACTIONS TO MATERIALS USED IN DOUGH-MAKING.

Following inquiries made at the request of the Baking Trade Employees' Federation in August, 1929, I tried out the skin reaction by scratch testing of an affected baker to the flour, yeast food, and yeast used, and finding a marked reaction to a yeast food, I ascertained its composition and developed a practice of subjecting affected bakers to testing by wheat flour, wheat malt flour, ammonium chloride, ammonium persulphate and later by potassium persulphate and potassium bromate used in other activators, by ammonium and potassium sulphate, and by other substances used in bakeries.

For some years past I have adopted the practice of using whole products in testing for industrial sensitizations—this practice followed the disappointing results I had got from Coca's method. One may not be able to prove a protein sensitization but one can incriminate a product of possessing properties irritant to the individual tested. For example, a few years ago a carpenter complained of a rash when he worked with Queensland maple wood (*Flindersia chatawiana*). When tested by Coca's solutions, protein and alcoholic, no reaction was given but fine sawdust provoked a marked response.

The first baker with dermatitis (Figs. 1 and 2) who was tested (18th November, 1929) was apparently markedly allergic or susceptible, a large wheal and erythema resulted from wheat flour, yeast food, wheat malt flour, and ammonium persulphate. Next day the skin reactions to the yeast food and persulphate still persisted and did not clear up for some days. A month later it was desired to use this baker in a demonstration. The immediate reactions to the scratch tests were marked, the wheat flour and wheat malt flour reactions cleared up in a few hours but the ammonium persulphate reaction persisted for three weeks, and from this focus there spread a vesicular erythematous eruption identical with that produced by his work of dough-making. This man was affected by a severe rash of arms and neck within a week of returning to work on two occasions. The increase of the sensitiveness seen in this case was, it is interesting to note, to the inorganic persulphate and not to the organic substances. This increase of severity of effect is contrary to the general observations of Prosser White.‡

* White, R. Prosser, "The Dermatergoses," p. 313.

† Tankard, A. R., *Lancet*, August 11, 1923.

‡ (loc. cit.) page 51.

I understand that a year after my tests this dough-maker had patch tests applied to his abdomen by another medical man on two occasions and that the erythema and vesiculation resulting from persulphates persisted for three months on each occasion.

Another point of interest in this case was the development of a rash on the instep and about the ankles, ascribed, and I think rightly, to the fact that the worker did not wear socks and stated that he wet these parts by splashes from the liquor containing persulphate.

Testing with persulphate was repeated also in cases Nos. 8 and 9 with no increase in severity of effect. Several bakers who had an infection of the skin due to *Epidermophyton* (species) gave no reactions to flours or persulphate, and my staff and several others showed no response. Other bakers with no clear history of dermatitis gave no reactions to the substances used. A few bakers with a history of asthmatical attacks gave a reaction to wheat flour and wheat malt flour. One in particular developed a giant wheal several inches in diameter. It was found that bakers who gave a slight reaction to persulphate within one half to one hour might develop a much greater reaction within a few days following the test and that the testing would partially light up a resolving dermatitis if it were present. In view of the growing practice of bleaching flour, various brands of flour were used but no differences were found in the skin reactions produced.

Ammonium and potassium sulphate was used as a testing agent on several occasions, but did not produce a reaction any greater than that given by flour, &c., in those susceptible individuals in whom the persulphate of these bases gave rise to definite and continued irritation. From this it appears that the persulphate radicle is definitely culpable. Potassium bromate, another chemical, largely used in activators, was tested on several occasions but produced no or very slight skin reaction. That the individuals who react to persulphate are of a susceptible or allergic type is shown by the frequency of their response to flour and wheat malt flour. A tabulation of bakers tested appears with the text. A rural worker who had been affected by dermatitis due to stinkwort (*Inula graveolens*) and gave a marked reaction to the juice of this plant responded equally to persulphates.

It has been contended that the method of scratch testing used in my investigations is inferior to the method of patch testing. Both of these methods have their uses, and in this particular investigation I am satisfied that the method of scratch testing affords a more useful means of determining whether an individual is likely to be affected by exposure to persulphates.

It is not illogical to believe that the dermatitis seen in those exposed to persulphate is due to the persulphate radicle and not to the other substances to which they also respond on scratch testing, for the response to other substances by these individuals is evanescent seldom lasting more than an hour, but the response to persulphate may last for days.

One or two individuals have shown an increase of sensitivity on repeating these tests, others have not.

I have not written of the immunological character of this response to persulphates. The somewhat muddled stream of present day thought on sensitivity, susceptibility and allergy, suggests the recording of facts rather than the expression of opinions.

ECZEMATOID RINGWORM.

Dermatitis due to fungal infection which is found throughout the community was seen also in dough makers during the recent outbreak. This disease, commencing as it does with vesiculation and erythema, is difficult to separate from that due to persulphates and only by knowing of an exposure to persulphates and testing the reaction to them and searching the scales for a fungus is a diagnosis possible.

The Hippocratic puzzle occurs when all three factors are present. This eczematoid ringworm has been labelled clinically either as dermatitis due to *Epidermophyton* or as *tinea albigena*. It has been ascribed to *Epidermophyton cruris* (Castellani) and other species, and to *Atrichophyton albiscians* (Nieuwenhuis) but the fungus has seldom been isolated and determined in Australia and probably the general title of eczematoid ringworm is most fitting.

SUMMARY.

An outbreak of dermatitis among bakers employed as dough makers occurred in New South Wales in 1929-30. Over fifty cases were recorded—about one man in every twenty of those employed in dough making was affected by a vesicular papulo-erythematous rash of hands, forearms, arms, neck and sometimes the lower extremities and the groin which cleared up on leaving work but recurred on returning.

Cutaneous tests showed that individuals who suffered from or who had been affected by dermatitis were sensitive to ammonium persulphate, an ingredient of yeast foods, or activators used, and that they were generally of a susceptible or allergic type. Removal of persulphate from these activators practically abolished the incidence of the disease.

TABLE showing the cutaneous reactions to certain substances of bakers affected by dermatitis or asthma.

No.	Date of Leaving Work for First Time.	Cutaneous Reactions within one hour to Substances used in Dough-making.								Reaction to Ammonium Persulphate on Days following Test.	Remarks.
		Wheat Malt Flour.	Wheat Flours.	Ammonium Persulphate.	Ammonium Chloride.	Yeast Food.	Treacle.	Extract of Malt.	Dried Yeast.		
1	24-9-29	+++	+++	+++		+	-			First test 18th Nov., 1929, persisted for ten days without spreading. Second test, 19th Dec., 1929, persisted for over three weeks and spread in a few days down arm.	Later had two recurrences on returning to work.
2	8-11-29		+	+	+	+				Erythema next day .....	.....
3	19-1-30	-	-	+			-			Not seen after day of testing.....	.....
4	11-10-29	+++	+	+++	+	++	-			Not seen after day of testing ...	.....
5	10-1-30	+	+	++			-			Not seen after day of testing ...	.....
6	2-10-29	+	+	++			+			Not seen after day of testing ...	Later had two recurrences following return to work.
7	22-2-30	-	-	+						Not seen after day of testing ...	.....
8	22-2-30	++	++	+				++	-	Showed increased wheal and erythema to dilutions of 10 per cent. to 0.5 per cent. on following day.	Had two recurrences of dermatitis; also asthmatical attack for three years.
9	23-6-29	+	+	+		++				On following day showed marked wheal and erythema. See figs. 3 and 4.	Later had two recurrences following return to work.
10	23-3-30	-		-		-		-		Definite reaction after forty-eight hours; still present seven days later.	.....
11	15-9-29	+++	-	++		++		+++		.....	Had recurrence before testing.
12	29-1-30	-	-	-				-		Not seen after test	Eczematoid ringworm, fungus in scales.
13	10-29	½+	½+	++			½+	½+	½+	Both 5 per cent. and 1 per cent. dilution showed wheal and erythema; still present three days later.	.....
14	3-6-30	-	-	-						Not seen after test .....	.....
15	30-6-30	½+	-	+		+				Erythema present on following day.	Had had a previous attack of dermatitis.
16	10-29	+	+	½+		+				Erythema on following day, and still present on third day.	Testing aggravated dermatitis. Burnt wrists with hot tins, and continued at work. Dermatitis 1/52 later.
17	11-7-30	+	-	½+	-	½+				Erythema on following day, and still marked on fourth day.	Later a recurrence of dermatitis after returning to work.
18		++++	++++	-						No delayed reaction	Within a few minutes showed giant wheals to all wheat flours, wheat malt flour. Complains of asthma.
19	31-7-30	++	++	-	+					No delayed reaction	Seborrhœic dermatitis.
20	2-7-30	++	++	++					-	Not seen after test	Patch tests to many substances, other than persulphate, February, 1931, all negative, had recurrence of dermatitis following return to work.
21	21-6-30	++	++	+				++	-	Next day showed marked reaction. Third day ditto.	Had recurrence of dermatitis after one night's work, November, 1930. Also complains of asthma.
22	6-6-30	-	-	++						Wheal and erythema diminished on following day.	Dermatitis, June to August, 1930.
23	12-12-30	-	-						-	Not seen on following day	Complains of trochitis only. No dermatitis. Not a dough-maker.
24	4-4-31	-	-	-						Definite reaction on following day to strong and weak solutions.	First noticed rash in October, 1930, but continued at work till April, 1931.

NOTE.—A number of these bakers were also tested with maize, arrowroot, potato, and rice starch, but showed no reaction. The yeast foods used in this testing contained 2 to 3 per cent. persulphate.

SECTION II.

I.—Metropolitan Combined Sanitary Districts of Sydney.

Report of the Medical Officer of Health for the Year 1930.

J. S. PURDY, D.S.O., M.D., C.M. (Aberd.), D.P.H. (Camb.), F.R.S. (Edin.), F.R.San.I.

To the Director-General of Public Health,

Sir,

I have the honor to report on the health conditions of the Combined Sanitary Districts of the Metropolitan Area of Sydney for the year 1930. Both the death and infantile mortality rates were slightly lower.

The Metropolitan Combined Sanitary Districts for the purposes of health administration consist of the Metropolis together with nine outside Metropolitan districts.

The Metropolis or Sydney proper and Suburbs includes the City of Sydney and forty-six municipalities.

The outside Metropolitan districts, which are separately dealt with statistically, include seven municipalities together with Warringah and Hornsby shires.

Since 1929 the municipalities of Auburn, Bankstown, Granville, Lidcombe and Parramatta have been included in the Metropolis.

From the beginning of 1927 deaths have been distributed by the Government Statistician to the locality, where known, in which the deceased permanently resided, and births to the place of permanent residence of the mother.

Unfortunately, therefore, the details in this report as far as the Metropolis proper is concerned are not comparable with those of years, other than that of the year 1929.

With regard to the total Metropolitan Combined Sanitary Area, there has been no alteration, consequently it is possible to compare the details with those of years previous to and including 1929.

The population of the Metropolitan Combined Sanitary Districts was estimated by the Government Statistician to be 1,333,840 on the 31st December, 1930, of which the City of Sydney contained 109,500, an increase of 500 as far as the City proper is concerned. The population at the end of 1929 was 1,316,620 so that the increase for the whole Metropolitan area during the year was 17,220, equivalent to 1·3 per cent. The mean population was 1,324,600.

The Metropolis.—The population of the Metropolis on 31st December, 1930, was 1,253,560, of which the city proper contained 109,500, and the suburban municipalities 1,144,060. The mean population for the Metropolis was 1,245,610.

Marriages.—The marriages within the Metropolitan Combined Area numbered 10,085, a rate of 7·61 per 1,000 of the population.

Births.—In the Metropolitan Combined Area, the births registered numbered 23,388, equivalent to a rate of 17·65 per 1,000 of population. Of the births 11,925 were males and 11,463 females, the proportion being 104 males to 100 females. The ex-nuptial births numbered 1,232 or 5·27 per cent. of the total births, and ·93 per 1,000 of the population. The birth rate for 1930 was the lowest recorded for Sydney.

Deaths.—The deaths in the Metropolitan Combined Area numbered 11,551, giving a rate of 8·72 per 1,000 of the population. The number of children under one year of age who died was 1,157, or 49·47 per 1,000 births.

SUMMARY OF VITAL STATISTICS.

Metropolitan Combined Area, 417,119 acres (651 $\frac{3}{4}$ square miles); population (estimated to the middle of the year, 1,324,600) on 31st December, 1930, 1,333,840, an increase during the year of 17,220, equivalent to 1·3 per cent.; births 23,388 (birth rate 17·66); deaths 11,551 (death rate 8·72); deaths of infants, under 1 year of age 1,157 (infantile mortality rate, 49·47 per 1,000 births).

TABLE I.

SHOWING Population, Density of Population, and certain Death-rates in the Municipalities of the Metropolitan Combined Sanitary Districts for 1930, including deaths which have occurred in General Hospitals, Special Hospitals for Consumption, and Hospitals for the Insane. Deaths occurring in Hospitals in the Metropolis have been distributed to their proper districts before calculating these rates.

Municipality.	Estimated Mean Population, 1930.	Mean Density of Population to the acre.	All Causes.	Diarrhoeal Diseases, including Enteritis.	Epidemic Diseases.	Tuberculosis of Respiratory System.	All Tubercular Diseases.
City of Sydney	109,230	33·7	1,185	31	35	83	86
Alexandria	10,350	9·8	82	6	6	4	5
Annandale	13,110	37·9	119	4	4	5	5
Ashfield	39,670	19·4	337	14	14	16	16
Auburn	19,790	7·6	160	11	9	6	7
Balmain	33,160	33·9	332	20	4	15	19
Bankstown	21,950	1·1	128	4	8	4	4
Bexley.....	20,230	10·6	154	7	4	4	4
Botany	7,860	3·6	45	...	3	...	...
Burwood	19,440	17·6	161	6	7	6	6
Canterbury	73,030	8·8	554	22	30	30	35
Concord	22,290	8·2	146	2	9	8	11
Darlington	3,660	67·8	32	...	...	1	1
Drummoyne	29,010	14·8	195	3	8	9	9
Eastwood	2,940	1·0	32	...	...	5	5
Enfield	13,940	8·3	116	9	3	9	9
Erskineville	7,610	40·9	73	10	4	8	8
Glebe	23,130	44·7	201	5	8	12	13
Granville.....	19,090	4·7	147	15	5	9	9
Honebush	3,170	5·3	44	1	3	5	5
Hunters Hill	9,670	6·8	69	1	2	1	1
Hurstville	21,390	3·5	185	7	8	12	12
Kogarah	29,260	6·1	214	5	8	13	15
Ku-ring-gai	27,940	1·4	212	...	2	20	25
Lane Cove	14,770	5·8	97	...	2	4	4
Leichhardt	31,410	27·2	287	14	16	10	10
Lidcombe	15,610	3·0	391	12	6	15	17
Manly	26,030	9·3	210	3	1	9	9
Marrickville	46,490	24·6	374	12	10	19	22
Mascot	13,760	5·4	109	3	3	6	6
Mosman	24,940	11·7	205	...	2	4	4
Newtown	28,630	59·6	284	11	17	19	23
North Sydney	54,920	21·7	483	6	11	24	27
Paddington	27,040	64·2	312	9	6	19	20
Parramatta	17,590	7·9	178	2	4	12	14
Petersham	28,210	33·2	261	5	5	11	14
Randwick	73,610	8·6	619	9	19	43	45
Redfern	24,150	59·8	248	13	18	13	14
Rockdale	37,300	7·3	287	4	12	7	11
Ryde	25,570	3·7	179	3	3	13	16
St. Peters	13,880	15·4	97	8	3	6	8
Strathfield	12,140	6·8	98	1	7	3	3
Vaucluse	7,290	9·2	48	2	...	...	...
Waterloo.....	12,840	15·5	128	4	10	8	9
Waverley	52,190	23·9	413	8	18	22	24
Willoughby	42,070	7·7	302	9	9	8	11
Woollahra	34,250	18·2	321	7	2	14	18
Total Metropolis	1,245,610	8·3	10,854	328	368	574	639
Cabramatta and Canley Vale	4,720	...	38	1	1	...	1
Dundas	5,540	...	34	1	1	1	1
Ermington and Rydalmere	2,190	...	34	1	...	...	...
Fairfield	7,690	...	58	1	4	2	2
Holroyd	14,610	...	102	2	3	10	10
Hornsby	20,980	...	217	9	11	34	40
Ingleburn	1,620	...	6	...	...	1	1
Liverpool	6,190	...	84	1	3	1	1
Warringah	15,450	...	124	3	3	1	4
Total	78,990	...	697	19	26	50	60
Total combined Metropolitan Sanitary Districts	1,324,600	...	11,551	347	394	624	699

The death rate for the Metropolis for the year was 8·71 per thousand of the population in contrast to 10·15 for 1929, whilst the infantile mortality rate was 49·94 in contrast to 56·52 per 1,000 births in 1929.

In 1928 the average death rate in the Metropolis for the previous eight years was 8·94, the lowest recorded in any city with a population of half a million, whilst the infantile mortality was fifty-eight per thousand births. For 1929 the Municipalities of Auburn, Bankstown, Granville, Lidcombe, and Parramatta were added to the forty-one municipalities previously included in the Metropolis.

The death rate for the Metropolis of Sydney within its present boundaries for the years 1927-1930 inclusive was 9·57.

Although the death rate in 1929 was 10·15 per 1,000, one had to go back a decade to find a death rate in the Metropolis above 10 per 1,000. Actually in 1917 it was only 9·75 per 1,000.

In 1930 Sydney could still claim the record for the lowest death rate for the past ten years in any city with a population of over half a million.

For the past ten years the population as to age distribution has approximated closely to the International standard population.*

Whilst the death rate for the Metropolis of Sydney was 8.71 in 1930, that for the rest of the State of New South Wales was 8.36. The death rate for the whole State was 8.54, slightly less than the death rate for New Zealand in 1930.

The infantile mortality rate for the Metropolis in 1930 was 49.9, for the remainder of the State 49.7, and for the whole State 49.8.

New South Wales has still to bring its infantile mortality down 15 per 1,000 to be on a par with the New Zealand record of 34.48 per 1,000 in 1930.

The following table compares the vital statistics of Sydney with several other cities :—

CITY.	Death Rate per 1,000 of Population.	Infant Mortality Rate per 1,000 Births.	Population.
Metropolis of Sydney, 1930	8.71	49.9	1,253,560
Melbourne 1930	8.91	50.70	1,016,400
Brisbane „	8.43	40.0	315,941
Adelaide „	9.25	55.14	324,659
Perth „	10.41	51.93	203,834
Hobart 1929	11.62	56.0	56,700
New Zealand			
Auckland 1930	9.06	35.0	213,330
Wellington „	9.24	40.1	138,510
Christchurch „	9.57	41.1	126,040
Dunedin „	9.32	33.3	85,420
England—			
Liverpool 1929	15.2	97	869,500
Manchester „	15.9	97	746,500
Leeds „	16.5	97	478,500
Sheffield „	13.2	87	518,300
Birmingham „	13.7	78	968,500
Bristol „	13.0	60	391,300
Greater London „	13.0	66	7,916,680

With regard to the infantile mortality when the figure had come down in 1928 to 49.3 for the Metropolis, one hoped that we were at the beginning of a decline in this rate. In 1929, however, it swung back to what obtained in 1927, practically only 3 per 1,000 less than in 1917. However, now that the infantile mortality for 1930 is under fifty, one trusts that the lower rate will be maintained.

The number of persons aged 65 and over who died in the Metropolis in 1930 was 4,395, or 40.49 per cent. of the total deaths. Of these 106 were aged 90 to 94; 24 were 95 to 99 and 4 were aged 100 and over.

CAUSES OF DEATHS IN THE METROPOLIS.

Diseases of the Heart.—An analysis of the chief causes of death in the Metropolis shows that the group diseases of the heart again occupies the premier position, accounting for 1,938, or a rate of 156 per 100,000 in contrast to a rate of 190 per 100,000 for the Metropolis for the previous year.

In Sydney in 1903 heart diseases formed 8 per cent.; in 1913, 9 per cent.; in 1923–1926, 15 per cent. and in 1927 to 1929, as much as 18 per cent. of the total deaths.

As to sex, there were 882 deaths from heart diseases among females to 1,056 among males; 16 males and 13 females under 25 years of age died from diseases of the heart; 42 males and 34 females from 24 to 40 years of age; and 552 males and 378 females from 40 to 70 years of age. Occupation is the main factor in the difference in the higher rates in men than in women after 40 years of age.

With regard to rheumatic affections, the great congener of heart disease, acute rheumatism, chronic rheumatism, chronic arthritis, rheumatoid and osteo-arthritis, and gout with rheumatic fever, only accounted for 58 deaths, or 4.17 per 100,000, actually an increase of 4 on that of the previous year. Of these deaths, 30 were due to acute rheumatic fever; 24 were under 20 years, 3 were aged 25–40, 2 were aged 40–70 and 1 over 70.

The fact that 86 men and 39 women died from angina pectoris again illustrates the greater frequency in later life of degenerative changes in the arteries of the male than the female. Syphilis and alcoholism cause degenerative changes both of the heart and arteries.

In 1930, 29 males and 16 females were reported as having died from syphilis, 8 males and 4 females being under one year of age. If a certificate of death were a confidential document, merely given by the medical practitioner to the Registrar, and certainly if the causes of death were always verified by post mortem, syphilis would be more frequently recognised as a primary cause of many degenerative changes ultimately ending in death.

Eleven men and 6 women died from alcoholism (acute and chronic), the ages of the women being two between 35 and 44, three between 50 and 54, and one between 60 and 64.

To secure a reduction of heart, kidney and other diseases, annual examinations should be more extensively encouraged by propaganda. Already one insurance company in Australia, following the lead of companies in U.S.A., has demonstrated that expenditure on health propaganda and the provision of nursing has been a good investment, not only in bringing increased business, but in lowering the age of the incidence of death among their clientele.

* Cumpston, Med. J. Aus., Vol.1, 1931, p. 681.

Cancer, the cause of which still baffles intensive and extensive research, with a terrible toll of 1,230 deaths (575 males and 655 females) in the Metropolis, and 83 in the outside metropolitan districts (a decrease of 25 for the whole metropolitan area) is next on the list of killing diseases, and emphasises the warning to people not to delay having recourse to a skilled surgeon for the removal of the first evidence of this malignant disease. As usual 60 to 74 years of age is the most fatal period to both sexes. As to the site of the disease and the importance as a causative factor of chronic irritation, only 7 females died from cancer of the buccal cavity (mouth) in contrast to 60 males so affected, suggestive of pipe smoking as a cause of irritation.

Cancer of the genital organs and of the breast caused 231 deaths of women over 40 years of age. The fact that 166 males and 69 females were recorded as dying of cancer of "other or unspecified organs," suggests either the need of a more extensive tabulation of the deaths as to the site of the disease, or more probably carelessness in filling in death certificates.

Bright's Disease (acute and chronic) claimed 700 victims, and comes third in the list. Acute nephritis (including unspecified under 10 years of age) accounted for 17 males and 14 females; chronic nephritis for the deaths of 357 males and 312 females. Between 40 and 65 years of age there were 153 deaths of males from chronic nephritis to 129 deaths of females. The excess of deaths in males one ascribes to occupation, drinking and over-eating, especially of meat.

Pneumonia comes fourth in the list of killing diseases, with 617 deaths; 237 from broncho-pneumonia (males, 127, and females, 110), and 377 (males, 199, females, 178) from pneumonia (other). As Osler pointed out, "this is one of the most widespread and fatal of all acute diseases," and has been "captain of the men of death," to use the phrase applied by John Bunyan to consumption.

Debilitating causes of all sorts render individuals more susceptible after 35 years of age. Alcoholism is perhaps the most potent predisposing factor, and with occupation, especially the inhalation of dust, rather than exposure in a climate such as ours, accounts for the higher incidence in men over 30 years of age.

Tuberculosis.—The number of deaths from all forms of tuberculosis in the metropolis proper during 1930 was, according to the Government Statistician, 639, of which 574 were due to tuberculosis of the lungs (an increase of 95), 25 to tubercular meningitis and 40 to other tubercular diseases. These figures include deaths of former metropolitan residents which occurred at Waterfall Sanatorium and other institutions. From the beginning of 1927 deaths have been allocated by the Government Statistician to the locality in which the deceased permanently resided. During the past forty years there has been a reduction of the death rate of pulmonary tuberculosis by more than half. Whilst intensive propaganda in the prevention of tuberculosis, together with instruction in sanatoria, must have had some effect in improving the general condition of the people, better housing, especially the elimination of dampness, increased wages, shorter hours of labour, better feeding, an all-round better standard of living, and, above all, more appreciation of living and sleeping in the open air, have all contributed to the ever-improving record.

Deaths from Accidents.—It is an indictment against modern conditions of living that the next most common cause of death is that due to accidents. In 1930, 562 persons (441 males and 121 females) were fatally injured—actually a reduction of 116 on the number for 1929 (525 males and 153 females).

Accidents from railways and tramways caused 37 deaths, of which 3 were women; vehicles and horses, 11 deaths (all males); motor vehicles, 235, a decrease of 53 on the record of the previous year. No less than 180 males and 55 females were killed during the year by motor vehicles. One can quite understand why Sydney is sometimes referred to as the city of "the Quick and the Dead." The traffic problem on the streets appeared to get more acute each year until 1930 as measured by the number of fatalities. It has been estimated that 65 per cent. of all accidents are due to negligence, lack of thought, and, above all, lack of appreciation of danger. The reduction for 1930 must be placed to the credit of the very fine police traffic control in Sydney. The work of the St. John's Ambulance organisation and Brigade, as well as that of the N.S.W. Royal Life Saving Society, especially on the beaches and the later movement for teaching "Safety First" throughout the schools, is to be commended.

The frequency of electrical burns and shock suggests that everyone should at least know how to remove a person from a live wire and how to resuscitate by the simple Schafer method.

Cerebral Hæmorrhage and Apoplexy accounted for the deaths of 192 males and 232 females, a total of 424. No less than 123 deaths were of females over 70 years of age.

DEATHS FROM EPIDEMIC DISEASES.

Measles.—There was a marked increase in the number of deaths from measles. Whereas there were 25 deaths in 1929, there were 81 in 1930. The sex distribution was 50 males, 31 females, 15 being under 1 year of age.

Whooping Cough accounted for 52 deaths, 83 less than in 1929. Under 1 year of age in 1930 there were 16 males and 18 females died from whooping cough; under 5 years of age, the deaths were 23 males and 26 females.

Scarlet Fever.—There were 32 deaths from scarlet fever in 1930, a decrease of 13 on the number for the previous year. To get similar numbers of deaths from scarlet fever in the metropolis to those of 1927 we had to go back to 1915, 1916 and 1902-03. On the estimated mean population in 1927 of 1,115,400 the death rate per 1,000 works out at .006, or 6 per 100,000 of the population, in contrast to 20 per 100,000 in England, where the death rate for scarlet fever had fallen from 1.2 in the sixties of last century to .02 per 1,000 in 1924; 24 deaths from scarlet fever in 1930 were of children under 5 years of age.

Scarlet fever, like other infectious diseases spread by droplet infection, appears to run in cycles, and apparently, as to its incidence independently of the thoroughness or otherwise with which it is controlled. The suggestion that contacts should not be kept away from school, but be examined daily during the incubation period, is supported by experiences in England. Probably the safest course where

there are not nursing facilities at home, is removal to hospital with exclusion of contacts from school unless provision is made for examination thereof. Reports are favourable as to the curative properties of anti-scarlatinal serum.

Diphtheria.—There were 80 deaths from diphtheria in 1930, 18 less than in 1929; 62 deaths were of children under five years.

Influenza.—In 1930 there were 49 deaths from influenza.

Infantile Paralysis.—There were 3 deaths from this disease in 1930, compared with 9 in 1929.

Epidemic Cerebro-spinal Meningitis accounted for 7 deaths, in contrast to 4 deaths in 1929.

Encephalitis Lethargica accounted for 11 deaths; in 1929 there were 12.

Typhoid Fever caused 13 deaths in 1930, as compared with 11 in 1929.

The infectious diseases to show decreases were scarlet fever, whooping cough, diphtheria, influenza and encephalitis lethargica. Typhoid fever, measles, epidemic cerebro-spinal meningitis showed an increase.

Diabetes accounted for 139 deaths. In 1929 there were 172 deaths. As noted in previous years the sixth decade of life had the largest number of deaths, later, on the average, than in England and the United States. Previously I have emphasised the sex incidence of this disease in so far as it has been a more frequent cause of death among women than among men in Sydney. The usual incidence in England and the United States is in the ratio of 3 men to 2 women, but the reverse in Sydney obtains. In 1930 the deaths were 90 females to 49 males. As a predisposing cause of diabetes is said to be nervous strain and worry and the disease is more frequent in those not employed in manual labour, possibly the absence of domestic help is a factor in the relatively unusual high incidence among elderly women in Sydney.

Diarrhœa and Enteritis in 1930 accounted for 268 deaths of children under 2 years of age; and 60 of 2 years and over. In 1929 there were 181 deaths of children under 2 years.

Maternal Mortality.—In the metropolis in 1930 there were 45 deaths from puerperal septicæmia and 89 deaths from other puerperal diseases. In 1929 there were 44 deaths from puerperal septicæmia, 17 of which were cases of abortion and miscarriage. Of the 45 deaths in 1930 from puerperal septicæmia 23 followed abortion and miscarriage. Puerperal albuminuria and convulsions accounted for 9 deaths, a reduction of 11 on the previous year. Puerperal hæmorrhage caused 14 deaths, the same number as in the previous year. Other accidents of labour were credited with 21 deaths, an increase of 12. In the metropolis there were 99 deaths, an increase of 3, of women either in childbirth or immediately associated therewith. This gives a maternal mortality rate of 4.51 per 1,000 births, a slight increase on that of the present year. In the above figures are not included deaths from ectopic gestation, 10; "other accidents of pregnancy," 4; from illegal operations, 20, or 1 from abortion.

VIII.—PUERPERAL CONDITION.

	1929.	1930.
143A Abortion	2	1
143B Ectopic Gestation	12	10
143C Other Accidents of Pregnancy	2	4
143D Illegal Operations	24	20
144 Puerperal Hæmorrhage	14	14
145 Other Accidents of Labour—		
(a) Cæsarian Section	2	6
(b) Other Surgical Operations and Instrumental Delivery	1	1
(c) Others under this title	6	14
146 Puerperal Septicæmia	27	22
146A Puerperal Septicæmia following Abortion, Miscarriage	17	23
147B Puerperal Embolism and Sudden Death	5	8
148 Puerperal Albuminuria and Convulsions	20	9
149 Following Childbirth (not otherwise defined)	4	1
Puerperal Diseases of the Breast ... ..	...	1
Total Puerperal Condition	136	134

Infantile Mortality.—There were 1,095 deaths of infants under 1 year of age in the Metropolis during 1930 whilst the births numbered 21,927, giving an infantile mortality rate of 49.94 per 1,000 births. The most important causes were whooping cough, 34; pneumonia, 82; diarrhœa and enteritis, 219; congenital malformations, 67; congenital debility, &c., 64; premature birth, 353; injury at birth, 64; atelectasis, 34. Of the deaths in the first year of life no less than 504 occurred in the first week, and a total of 622, or more than half, in the first month. Looking at the rates of infant mortality in Sydney for the past fifty years we see a reduction from 192 per 1,000 in 1880 to 55 in 1929, a phenomenal decrease until 1917, when it was 58. The fall in the infant mortality rate is due to more rational feeding in later months, the under-one-month rate not having appreciably fallen. The problem of the reduction of neonatal mortality is wrapped up with the problem of maternal mortality, but cannot be solved entirely by intensive educational propaganda. It is also related to the problem of eugenics and has to do with the age of marriage, the elimination of the unfit, the suppression of venereal diseases and many other public health problems. One would like to see in Australia in general, and in New South Wales in particular, the visitation of mothers and infants within a few hours of childbirth, by the enforcement of the Early Notification of Births Act, the presentation of instructions to all women upon marriage, the teaching of all girls in schools in mothercraft and, above all, the formation in all districts of voluntary committees presided over by women imbued with the ideals of healthy motherhood and the need for prenatal and antenatal care.

TABLE 2.—(a) Showing Deaths of Children under 1 year per 1,000 births from 1880 to 1930, and
(b) Deaths of Infants in the Metropolis from various causes 1920–1930.

(a)—Infantile Mortality per 1,000 Births, 1880–1930.

Year.	Deaths of Children under 1 year per 1,000 births.	Year.	Deaths of Children under 1 year per 1,000 births.	Year.	Deaths of Children under 1 year per 1,000 births.	Year.	Deaths of Children under 1 year per 1,000 births.
1880	192	1893	147	1906	84	1919	79
1881	162	1894	134	1907	96	1920	74
1882	183	1895	131	1908	82	1921	63
1883	163	1896	139	1909	81	1922	58
1884	172	1897	129	1910	82	1923	64
1885	187	1898	153	1911	71	1924	57
1886	173	1899	120	1912	76	1925	57
1887	141	1900	109	1913	78	1926	61
1888	152	1901	120	1914	69	1927	56
1889	172	1902	112	1915	72	1928	49
1890	135	1903	116	1916	68	1929	56
1891	148	1904	98	1917	59	1930	50
1892	130	1905	89	1918	62		

(b) Deaths of Infants in the Metropolis from various causes 1920–1930.

(The accompanying graph shows the infantile mortality rate during the period 1909–30).

Cause of Death.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
Measles	20	3	1	6	2	1	8	1	23	12	15
Scarlet fever	...	...	...	...	...	2	2	5	5	3	2
Whooping-cough	121	27	24	24	16	74	38	70	16	79	34
Diphtheria	11	11	10	12	5	12	11	8	8	14	7
Influenza	6	7	1	9	4	8	5	5	3	3	2
Cerebro-spinal meningitis	2	1	3	2	3	2	6	3	2	...	2
Tuberculous meningitis	1	9	8	2	6	3	5	4	2	10	5
Other tuberculous diseases	3	5	2	2	1	5	5	3	5	4	4
Meningitis	7	14	10	19	20	15	18	17	12	14	11
Convulsions	22	18	15	11	13	12	25	19	5	4	4
Other nervous diseases	8	4	1	2	2	2	9	4	2	5	...
Bronchitis	26	20	21	29	16	18	10	13	13	19	14
Pneumonia	126	101	132	129	139	141	105	146	108	164	82
Other respiratory diseases	12	6	2	2	4	3	1	5	7	3	1
Diseases of the stomach	11	12	6	6	5	5	6	8	3	1	2
Diarrhoea and enteritis	443	385	257	407	224	211	281	163	181	144	219
Intestinal obstruction and hernia	10	17	7	8	9	9	17	5	6	12	5
Bright's disease	...	2	2	...	1	...	1	1	...	2	1
Prematurity	440	379	362	379	382	355	388	313	320	379	353
Other developmental diseases	319	332	351	299	337	298	301	288	268	313	259
Accident	12	9	7	10	13	11	7	13	8	20	13
All other causes	57	52	57	47	60	68	66	67	45	58	60
Total	1,658	1,414	1,279	1,405	1,262	1,255	1,315	1,161	1,042	1,263	1,095

In 1930 the most important causes were whooping cough, 34; pneumonia, 82; diarrhoea and enteritis, 219; congenital malformations, 67; congenital debility, etc., 64; premature birth, 353; injury at birth, 64; atelectasis, 4.

INCIDENCE OF INFECTIOUS DISEASE.

Scarlet Fever.—In 1930 there were 2,972 cases of scarlet fever notified and 25 deaths in the Metropolitan area, in contrast to 3,371 cases and 45 deaths in 1929. The graph shows a continual decline in the incidence of scarlet fever in this, the third year of the usual five-yearly period of comparative quiescence.

Since scarlet fever was first notifiable in 1898, there has been a series of five-yearly periods of quiescence followed by similar periods of treble and quadruple incidence, with a twelve-yearly period of inmaximum incidence as in 1903, 1915 and 1927—generally ascribed to the appearance of children who have not acquired immunity by a previous attack.

An interesting outbreak of 11 cases of scarlet fever in the Concord district from 20th October, 1930, to 25th November, 1930, showed one common source of milk, supplied by a local milk vendor (with no cows) from another milk vendor in another district (also with no cows) who obtained his supply from the country.

On examination the first milk vendor who was himself a case of scarlet fever, on discharge from hospital, was found to be negative as to bacteriological examination of nose and throat. A carter, however, with whom the milk vendor was in association and who distributed milk to nine of eleven of the people infected, was actually found to carry the specific organism of scarlet fever in his nose. It was learned that he had suffered from a sore throat for some weeks before his employer contracted scarlet fever. Incidentally the wife of the employer, although she had never had any symptoms of the disease, was also found to be a carrier.

It was necessary to have the carter, who was positive to the infective organism, taken off the job of handling or distributing milk.

METROPOLIS.—DEATHS UNDER 1 YEAR PER 1,000 BIRTHS.

1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930

0

10

20

30

40

50

60

70

80

90

100

METROPOLIS.—DEATH RATE PER 1,000 POPULATION.

30

20

10

0

10.27

10.36

10.90

11.37

11.18

10.26

10.81

10.68

9.73

10.02

14.69

12.21

9.07

8.16

9.65

9.29

9.15

9.70

9.59

9.33

10.15

8.71

Diphtheria.—In 1930 there were 1,907 cases of diphtheria with 82 deaths in the Metropolitan area, in contrast to 2,077 with 102 deaths, giving an attack rate of 1·59 and a death rate of ·07 per thousand in 1929.

With regard to the reduction of the incidence of both scarlet fever and diphtheria, such could be obtained by the establishment of District Community Health Centres where the pre-school child population could be immunised. Until this is done, a favourable opportunity for which offers at the present time for the amalgamation or close co-ordination of the Department of Health and the medical inspection of schools organisation of the Department of Education, we are handicapped in reducing the incidence and therewith the death rate of the above infectious diseases. It would of course be possible to utilise the Baby Welfare Centres, and later the schools, for immunising those not previously treated.

Infantile Paralysis.—In the Metropolitan area in 1930 there were 15 cases with 4 deaths in contrast to 149 cases with 17 deaths in 1929.

As showing how foolish it is to attempt to foretell the future—there has never been any—the serious epidemic of infantile paralysis, prophesied by those anxious to be forearmed each year for the past six years since the epidemic in New Zealand, has not eventuated. Since the conference in the Sydney Town Hall and the response to the appeal of Sir Charles Clubbe, the distinguished doyen of pediatrics in New South Wales, there is now an expert diagnostician of this disease always available for consultation with close co-operation, and a supply of convalescent serum for use in the early stages of the disease.

Typhoid Fever.—There were 116 cases with 13 deaths of typhoid fever in the Metropolitan area in 1930; in 1929 there were 184 cases with 11 deaths.

In 1928 there was a decrease of 41 per cent. on the average of 39 for the previous five years. The marked reduction of the morbidity and mortality from typhoid fever is an index of progress in communal sanitation. The death rate from typhoid fever is now a fifty second of what obtained in Sydney forty years ago.

Thus per 100,000 the typhoid death rate has fallen from 51·3 for 1888–1890; to 21·6 for 1891–1900; to 13·2 for 1901–1910; to 11·8 for 1910–1915; 6 for 1916–1920; and 2·8 for 1921 to 1926. For the past three years the death rate has been 1 per 100,000.

Nearly a quarter of the population has not yet the advantages of sewerage for their dwellings. Thus the population in sewered areas at 30th June, 1930, was 1,002,860, and in unsewered areas 323,355.

One has urged repeatedly that the extension of the sewerage system is a work that should be pushed on with the certitude of an adequate return in improved health and comfort. One felt ashamed recently when a large new factory was erected in one of our larger industrial suburbs by a Granville firm, and it was neither possible to connect with the sewerage system or a septic tank, in the latter little effort being made by tenants of an adjoining estate to co-operate. Yet we are living in the third decade of the twentieth century.

Although no cases of typhoid in 1930 were traced to the eating of oysters it has been necessary to repeatedly warn the public against the risk of taking oysters from polluted waters.

Epidemic Cerebro Spinal Meningitis.—There were 26 cases and 9 deaths notified in 1930 in contrast to 15 cases and 4 deaths in 1929.

NON-NOTIFIABLE COMMUNICABLE DISEASES.

Measles.—There were 81 deaths from this disease in 1930 and only 25 in 1929.

The difficulty of preventing the spread of this disease is its high infectivity previous to the appearance of the rash, as well as that it remains communicable right throughout the period of catarrhal symptoms. Owing to the impossibility of taking action with a view to isolation in the infective pre-eruptive stage, this disease has not been declared an infectious disease under the Public Health Act, and so is not notifiable. The closure of schools is of no avail in controlling an epidemic of measles. Good results, however, follow the exclusion from school of children during outbreaks who appear from their sickness records not to have had the disease.

A feature of measles is that it may develop a high degree of infectivity and fatality, either when introduced among a people for the first time or after a long absence.

Thus in 1874 the son and one of the retainers of the Chief of Fiji sickened with measles on the voyage home from Sydney, as a result of which no less than one-fifth of the total population of Fiji died from this disease.

In 1912 I investigated an outbreak in the islands of Bass Straits, which I diagnosed as measles simulating scarlet fever, but another medical officer, Dr. Whetter (just returned from the Mawson Antarctic expedition), regarded the outbreak as scarlet fever simulating measles. This outbreak spread among the children, especially of Flinders Island, and was of a severe character.

Although the death-rate from measles is not high in Sydney there does not appear to be much immunity therefrom among the population. Although the infective organism has not been definitely isolated, measles has been produced by sterile filtrates of the blood of persons suffering from the disease, and also by sterile filtrates of nasal secretion collected in the pre-eruptive stage, showing that the virus is a filter-passer.

An injection of blood serum of patients convalescent from measles confers in many cases an immunity but only for about a month.

DISINFECTION.

Although terminal disinfection on the removal or death of a patient is still continued, the chief value of this procedure is that such a mess is made of the room or house that the people have perforce to thoroughly clean up thereafter, and especially when formalin is used, must flood the room with fresh air by opening doors and windows.

Sunlight and fresh air are the best natural disinfectants. It is not the place or room really that requires disinfection, but the patient, who actually harbours the germs of disease and spreads them in speaking, coughing, sneezing, or by droplet infection.

The modern procedure is isolation with supervision by the medical practitioner or nurse, who should always carry out careful disinfection of secretions from the patient. This is especially necessary in cases of diphtheria, where treatment by anti-toxin, whilst it counteracts the effect of the toxin, does not remove the infective germs. All cases of diphtheria, scarlet fever, measles, encephalitis lethargica, infantile paralysis, meningitis, and all diseases spread by nasal and mouth discharges should be treated by local disinfection of the nose.

SANITARY SURVEY.

During 1930 special attention was given to disposal and destruction of nightsoil and garbage.

In spite of extension of sewerage of late years, there are still in the metropolitan area 24 burial depots, 9 dumps where nightsoil is passed into the sewers, 2 localities where it is tipped into the sea, and 1 depot where it is converted into poudrette by drying.

Two recent Supreme Court decisions are of importance to local authorities. In 1912 approval was given by the Board of Health for the Municipal Council of Kogarah to use a site in an adjoining municipality (Rockdale) for the disposal of nightsoil. In 1926 the Rockdale Council passed a resolution prohibiting the use of this depot. The Kogarah Council continued to use it, until proceedings in equity were taken by the Rockdale Council, and an injunction secured against the Kogarah Council. On appeal to the High Court the injunction was upheld on the ground that no power was given to the Council of one municipality to establish or carry on a sanitary depot in the area of another Council without the consent of such other Council.

A case of interest in 1930 was that of *Archibald v. The Cabramatta Council*, in which the proceedings were based on the ground that the Council's contractor had not buried nightsoil strictly in accordance with the requirements of the Local Government Act. Judgment was delivered against the Council, although evidence was given to show that superficial burial tended to the more effective disposal of the nightsoil; the Council, however, had not complied with the Ordinance in that it had not previously obtained the approval of the Board of Health to the method employed.

Down to the end of 1930 fourteen Local Authorities, as well as Cabramatta, had secured the necessary approval to permit of nightsoil being buried at a depth of not less than 8 inches by forthwith covering it with not less than 6 inches of earth.

Without this reservation, ploughing nightsoil into the ground does not strictly comply with the requirements of the Ordinance. Authoritative opinion, based on actual investigation, favours more superficial burial than that permitted by the Ordinance.

The Board of Health has approved of tipping nightsoil directly into sewers, a more satisfactory method of disposal than burial. The first successful experiment was carried out at Marrickville, where a process was devised by which nightsoil was tipped into the sewer without any offence to the neighbourhood, a process which has been adopted in other localities as sewers become available.

Although the method of emptying nightsoil into the sea still obtains at two places, it is a source of annoyance to persons in the vicinity, and is an expedient which has only been permitted as a lesser evil.

Incineration of Garbage.—Two incinerators were erected during 1930, namely, at Bexley and Kuring-gai; Paddington and Marrickville carried out large extensions to their incinerators; and Randwick is installing an incinerator near Matraville. At present there are fourteen incinerators in the metropolitan area.

The thirty-one municipalities named below still rely on tipping for disposal of garbage :—

Alexandria.	Homebush.	Rockdale.	Granville.
Botany.	Hurstville.	St. Peters.	Holroyd.
Burwood.	Kogarah.	Strathfield.	Hornsby Shire.
Conecord.	Lane Cove.	Vaughan.	Lidcombe.
Drummoyne.	Mosman.	Waterloo.	Liverpool.
Eastwood.	Mascot.	Willoughby.	Parramatta.
Enfield.	Randwick.	Auburn.	Warringah Shire.
Erskineville.	Ryde.	Bankstown.	

In some cases controlled tipping satisfactorily reclaims waste land. This has been shown at Concord, where an offensive mangrove swamp area on the Parramatta River has been converted into a recreation ground of 18 acres, an example which neighbouring municipalities might well follow. In this regard it was suggested that the garbage of Sydney, some of which is taken out to sea and dumped, might with advantage be taken up the Parramatta River and used for reclamation of mud flats and mangrove swamps, a course followed in many other countries.

Sewerage.—On 30th June, 1930, it was estimated that there were in the metropolitan area 200,320 sewered dwellings, and 67,131 dwellings (or one-seventh of the residential area, housing 323,355 persons) which were still unsewered.

These unsewered areas are still dependent on a double pan service, frequently with privies not fly-proof. In one municipality alone, Canterbury, with a clay soil and with many open ditches and trenches, 13,500 sanitary pans had to be removed each week in 1930. Attention is specially directed to the danger from fly-borne diseases in these unsewered areas.

Bathing and Swimming Baths.—There are probably unequalled facilities for open-air sea bathing and surfing in and around Sydney with its numerous fine ocean and harbour beaches (such as Manly, Bondi, Coogee, Balmoral, and many others), so that it may not be as necessary as in other cities to provide swimming pools or baths. There are also thirty-two tidal baths at various points around Sydney Harbour.

Six enclosed freshwater swimming pools have been established in and around Sydney, but with one exception (a city club) these are not provided with a complete system of water sterilization and filtration.

The modern practice is for a continuous filtration system, even for large open-air, sea-water baths, in preference to the tidal fill and empty system, especially where there is any risk of pollution from sewage.

The correct turnover period for a 100,000 gallon bath, as a rule, is four hours, but for a big sea-water bath of 300,000 gallons this would probably be sufficient.

So far no direct cases of infection have been traceable to bathing in sea water. One suspicious case within my experience is that of a colleague who bathed daily in a swimming bath and contracted typhoid fever.

The public is gradually being educated by propaganda to realise that water is not safe to swim in unless it is safe to drink, and this standard can only be secured with regard to fresh water by the process of filtration and continuous sterilization or chlorination. Pollution on some of the surf beaches has been alleged, but the dilution is so enormous that pollution should be negligible.

Parks and Playgrounds.—Although twelve years have passed since the attention of local authorities in the metropolitan area was directed to the need of securing not less than 10 per cent. of their area for parks and recreation grounds, with the exception of the City Proper (which has 19 per cent. of its area reserved for recreation), Woollahra, Marrickville, North Sydney, Lidecombe, and Manly, nothing commensurate with the increase in population has been done to provide sufficient playgrounds and recreation areas.

Recently the Town Planning Association and those directly concerned with parks and playgrounds have induced the Government to commission the Surveyor-General to make an inquiry into the requirements as to parks and playgrounds in the metropolitan area, and a committee has been formed with the Surveyor-General as Chairman.

INSPECTION OF RESTAURANTS, TEA-ROOMS, BUTCHERS' SHOPS, MILK VENDORS, COMMON LODGING-HOUSES BARBERS' SHOPS, &C., IN THE CITY PROPER UNDER SYDNEY MUNICIPAL COUNCIL.

In connection with the general administration of the City Health Officer's Department, it may be stated that there are 21,637 premises, 360 restaurants, 255 tea-rooms, 65 grill-rooms, 254 fruit shops, 76 fish shops, 100 butchers' shops, 483 barbers' shops, and 1,318 milk vendors in the city.

The following is a summary of the routine work during the year :—

1. Number of complaints received and dealt with	...	...	...	...	...	...	...	...	397
2. House-to-house inspection work, re-inspections, inspections <i>re</i> restaurants, garbage receptacles, streets, lanes, &c.	...	...	...	...	...	...	...	...	38,859
3. Inspections of butcheries, meat depots, poulterers, &c.	...	...	...	...	...	...	...	...	9,387
4. Inspections made under Pure Food Act Regulations	...	...	...	...	...	...	...	...	19,195
5. Inspections of common lodging-houses	...	...	...	...	...	...	...	...	25
6. Inspections under Dairies Supervision Act	...	...	...	...	...	...	...	...	3,174
7. Investigations of smoke nuisance	...	...	...	...	...	...	...	...	247
8. Investigations of infectious diseases	...	...	...	...	...	...	...	...	262
9. Notices served	...	...	...	...	...	...	...	...	3,244
10. Number of premises referred to the City Building Surveyor	...	...	...	...	...	...	...	...	345
11. Plans reported on	...	...	...	...	...	...	...	...	997
12. Number of premises visited by rat-catching staff	...	...	...	...	...	...	...	...	9,520
13. Number of complaints investigated by rat-catchers	...	...	...	...	...	...	...	...	340
14. Number of traps set and poison baits laid	...	...	...	...	...	...	...	...	43,943
15. Number of rats caught	...	...	...	...	...	...	...	...	4,867
16. Number of milk vendors registered	...	...	...	...	...	...	...	...	1,318
17. Number of milk samples taken for analyses	...	...	...	...	...	...	...	...	1,000
18. Disinfection of premises	...	...	...	...	...	...	...	...	241
19. Prosecutions against offenders (Health Department only)	...	...	...	...	...	...	...	...	63
20. Total amount of fines inflicted	...	...	...	...	...	...	...	...	£160

LEGAL PROCEEDINGS, SYDNEY MUNICIPAL COUNCIL.

The following is a record for the year 1930, with regard to legal proceedings undertaken by the Sydney Municipal Council (Health Department only) :—

Sydney Corporation Act and By-laws	...	...	...	...	...	...	...	...	6
Public Health Act...	...	...	...	...	...	...	...	...	4
Pure Food Act	...	...	...	...	...	...	...	...	50
Police Offences Act	...	...	...	...	...	...	...	...	...
Electric Lighting Act	...	...	...	...	...	...	...	...	...
City of Sydney Improvement Act	...	...	...	...	...	...	...	...	...
Dairies Supervision Act	...	...	...	...	...	...	...	...	3
Total	...	...	...	...	...	...	...	...	63

One hundred and twenty-seven notices were served in the city proper under the Pure Food Act; 997 plans were inspected and reports made thereon by the City Health Officer's staff.

Three thousand two hundred and forty-four notices were served in the city under the Public Health Act, the Sydney Corporation Act, the Pure Food Act, the Dairies Supervision Act, and the Noxious Trades Act.

Of 1,000 samples of milk taken in the city, 5 were found not in conformity with the standard. There were 3 convictions for selling milk deficient in milk fat.

The following is a summary of the routine work during the year 1930 :—Dwellings inspected, 77; closing orders issued, 16; sanitary depot inspections, 70; sewer dump inspections, 26; new sanitary depot sites inspected, 6; garbage tip inspections, 81; garbage incinerator inspections, 26; cemeteries inspected, 5; typhoid fever investigations, 20; specimens collected for infectious disease cases, 32; parks and recreation ground inspections, 14; samples from harbour bed, 6.

Complaints of nuisances received and dealt with, 428, viz. :—Drainage, 139; stables, 59; poultry, 41; dogs, 33; rat infestation, 21; street gutters, 58; smoke, 14; dust, 16; sanitary conveniences, 33; sewer surcharges, 6; vermin infestation, 8.

Legal proceedings were taken by Local Authorities on the recommendation of this Department resulting in imposition of fines and costs amounting to £72 12s.

All the proceedings were taken under Ordinance 39 (4) of the Local Government Act, 1919, and were as under :—Canterbury, £8 16s.; St. Peters, £2 8s.; Paddington, £4 8s.; Leichhardt, £15 16s.; Balmain, £5 8s.; Burwood, £5 8s.; Concord, £30 8s.—total, £72 12s.

Septic Tank Installations.—Number of septic tanks inspected and approved by the Board of Health, 150; sites inspected as to suitability for installing septic tanks, 311.

2.—Hunter River Combined Sanitary District.

REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR ENDED 31st DECEMBER, 1930.

H. G. WALLACE, M.B., B.S., D.P.H.

I have the honour to submit the following report on health conditions in the Hunter River Combined Sanitary District during 1930.

Description.—The Hunter River Combined Sanitary District consists of eighteen municipalities and five shires; the estimated mean population in 1930 being 201,190.

The council of each municipality and shire is a Local Authority charged with the administration of the Public Health Acts and allied Acts, under the supervision of the Department of Public Health. Each Local Authority employs one or more health inspectors, while the staff of the District Headquarters of the Department of Public Health consists of the Medical Officer of Health, one senior sanitary inspector, one nurse inspector and one clerk, assisted by visiting inspectors from the Head Office staff in Sydney.

Vital Statistics.—Tables showing populations, births, deaths, infantile mortality rates and notifications of infectious disease are appended to this report. The birth rate for the district in 1930 was 21.30, compared with 22.7 for the previous year and 20.94 for the whole State (1930).

The number of ex-nuptial births was 166, or 3.8 per cent. of the total births.

The death rate for the district was 8.11, compared with 8.8 for the previous year and 8.54 for the whole State.

The chief cause of death was diseases of the heart, to which 259 deaths were attributed. Of these, 226 were at ages over 50.

Next in frequency came cancer, 168 deaths; pneumonia, 94 deaths; and accident, 89 deaths. Diarrhoea and enteritis came eighth in frequency with 68 deaths, of which 58 were at ages under 5 years.

Infectious Diseases.—Details of the reported cases of the notifiable infectious diseases are given below, in addition to the tables appearing elsewhere (p. 37).

DIPHTHERIA.

Four hundred and eleven cases of diphtheria were notified during the year, compared with 463, the annual average for the previous five years. Although the incidence was lower than usual, the isolation accommodation at the local hospitals was often severely taxed. An urgent need exists for increased accommodation for infectious diseases at Newcastle.

Seven deaths occurred during the year, giving a fatality rate of 1.5 per cent.

The incidence rate per thousand of population was 2.04. The death rate per thousand of population was .03, compared with .07 for the whole State.

The application of the Schick test with subsequent immunisation of susceptibles with toxin-antitoxin remained in abeyance during the year. There was a very limited use of toxin-antitoxin by medical practitioners during the year, but the response by the public showed that the method is still viewed with considerable distrust, and reports of mishaps in other parts of the world have tended to intensify this.

At present the chief weapon in our armamentarium is early diagnosis and prompt administration of antitoxin. The public hospitals, particularly the Newcastle Hospital, have done excellent work in this regard, but the establishment of the proposed Public Laboratory at Newcastle would provide diagnostic facilities for a much wider circle than can at present be reached and would enable the problem of the carrier to be dealt with more effectively.

The necessity for such an institution has recently been stressed by the Boards of several of the local hospitals, and there appears to be some likelihood of its establishment in the near future.

SCARLET FEVER.

Two hundred and thirty-five cases of scarlet fever were notified, compared with an average of 245 per annum during the previous five years. The disease remained mild in type, but two deaths were reported. Several of the cases were so mild that they were not recognised until after the illness had practically terminated and desquamation appeared. No reason was found to suspect the milk supply in any case, and though the disease was more prevalent on the coalfields than elsewhere the cases remained sporadic and were fairly evenly distributed throughout the twelve months.

TYPHOID FEVER.

There were only 26 cases of typhoid fever reported during the year—easily a record for the district—compared with an annual average of 60 during the previous five years. Three of these cases were from a vessel, the s.s. "Ilvington Court," which reached Newcastle from the Pacific Islands. These cases were of a very atypical nature, and the diagnosis remained in doubt for some time, the patients' sera failing to agglutinate the strain of typhoid used locally for diagnostic purposes, and blood and stool cultures

remaining negative. Finally agglutination of another strain of typhoid organisms was obtained thereby establishing the diagnosis. Two of the cases were very mild, but the third ended fatally. This patient developed a profuse generalized rash shortly before death and an arterial thrombosis. For a time typhus was suspected, but the Weil-Felix reaction was negative.

In several cases the contacts submitted to prophylactic inoculation of T.A.B. vaccine. The use of prophylactic inoculations appears to be becoming more popular, and may in part account for the diminished incidence in recent years.

Among the 26 cases, 5 deaths were reported, giving a fatality rate of 19·2.

The incidence rate per thousand of population was 0·1, and the death rate 0·02, compared with 0·19 for the whole State.

PULMONARY TUBERCULOSIS.

Ninety-eight cases of pulmonary tuberculosis were notified, compared with an average of 60 per annum during the previous five years. There were 61 deaths reported during the year.

The undertaking given by the medical practitioner in cases which he does not desire to be visited by the Health Officer, namely, that of instructing the friends of the patient in preventing the spread of infection does not appear to be always observed. Examples of this are found where one doctor notifies a patient "not to be visited," and later another doctor notifies the same patient "to be visited." Inquiry frequently shows that patient and relatives have not received adequate instructions. It appears to be desirable that the form of notification should be amended to provide in these cases, as is provided in the "Venereal Diseases Act," that the patient shall be given prescribed printed information.

It would possibly be of advantage, also, if the request that the patient should not be visited were placed on the back of the form, as it is common for the notifying doctor to sign inadvertently in both the spaces left for his signature. Roughly, one-third of the cases notified are marked "not to be visited," and it seems likely that a number of these are so marked by inadvertence.

The work of the Throat and Chest Dispensary, which is not under the control of this office, has increased under the capable charge of Dr. Ethel Byrne, and it is satisfactory to note that more support is being given to this institution by local doctors in sending doubtful cases for diagnosis, and utilizing it as a clearing-house for sanatorium treatment. As in previous years Nurse Inspector McKay has attended at each session throughout the year to assist Dr. Byrne, and has been of material help in co-ordinating the activities of the Benevolent Society and other charitable bodies with the work of the dispensary and of this office. The present arrangement appears to be in every way satisfactory in this respect. The fact that Dr. Byrne is a member of the honorary medical staff of the Newcastle Hospital has also facilitated co-operation between these institutions, although it may eventually be found preferable to establish the Throat and Chest Dispensary as an out-patient department of the Newcastle Hospital.

OTHER NOTIFIABLE INFECTIOUS DISEASES.

Encephalitis Lethargica.—Three cases were notified during the year, one each from Newcastle, Waratah and Kearsley Shire. In each case the disease terminated fatally.

Cerebro-spinal Meningitis.—Three cases were notified one each from Singleton, Waratah and Wickham, with one death.

Infantile Paralysis.—No cases were reported. Facilities for serum to be made available when necessary were offered by the Committee in Sydney, but fortunately it was not required.

Puerperal Infection.—1930 was the first full year in which puerperal infection has been notifiable. Ten cases were reported, with three deaths. Five of these cases were notified from the Newcastle Hospital. All but one were notified from Newcastle and suburbs. In each case the name of the nurse who attended the patient was ascertained in order to co-ordinate the activities of the Nurses Registration Board with those of this Department in preventing the spread of infection.

Dengue Fever.—The district remained free from dengue fever throughout the year. Anti-mosquito work was continued in most areas, and it is satisfactory to note a steady diminution in the prevalence of *Aedes argenteus*, although in some areas where this work was neglected this mosquito is still numerous.

Experiments were carried out in Newcastle and Cessnock with a water plant, *Nitella phauloteles* which had been described in Brisbane as having larvicidal and mosquito-repellent properties. No evidence was found to substantiate the claims made for this plant. Supplies were obtained from Rockhampton and from Brisbane and tested under various conditions. Although it was found to grow quite well, it seemed to have no effect on larvae except where in very small collections of stagnant water a film formed on the surface which may possibly have hindered deposition of eggs. In larger collections of water mosquitoes bred freely where the plant was growing.

Plague.—The district has remained free from plague since 1905. This department continues to employ one rat-catcher to take rats from the vicinity of the harbour, most of which were examined regularly throughout the year. The Newcastle City Council continued to pay a bonus of 6d. per head for rats brought into the depot in Cook's Hill. The Railway Department and the Department of Navigation continued to lay poison-baits on premises under their control, and improvements in the construction and supervision of produce stores assisted in keeping the number of rats down. Nevertheless miles of rubble-backed wharves still provide extensive breeding-grounds for rats, and the process of eliminating these is slow, so that plague will remain an unpleasant possibility until this work is completed. The Commonwealth Health Department continued to exercise supervision over shipping in the harbour by fumigation, trapping and supervision of rat-guards etc., in addition to the regular quarantine examination of ships and passengers by the medical officer stationed at Newcastle.

Housing.—Partly on account of the dispute in the coal-mining industry and the general depression of trade, numerous families vacated their dwellings, and the housing shortage disappeared. A general improvement was effected by increased activity in the matter of house inspection by the various councils.

In those areas where the health inspector was not qualified, the assistance of the staff of this Department was frequently given in deciding on the habitability of premises, and recommending necessary improvements where these were required, to bring dwellings up to a habitable standard. No instances of overcrowding came under notice during the year.

Infantile Mortality.—The total number of births was 4,286, and deaths under one year 228, giving an infantile mortality rate of 53·2 for the district, compared with an average rate of 62·5 during the previous five years.

On consideration of the figures for infantile mortality for the past twenty years a general fall, most marked in the last ten years, is seen. The diminution in general follows the figures for the whole State, although the rate for this district is somewhat higher than for the State as a whole. The first Baby Health Centre was established in 1915, and there are now eight centres established at Cessnock, Hamilton, Mayfield, Kurri Kurri, Newcastle, New Lambton, West Maitland and Singleton, with subsidiary depots at seven centres.

From the figures published in the Annual Report of the Director-General of Public Health for 1929 it appears that 3,497 new-born babies in this district were visited by nurses from the Baby Health Centres, out of a total of 4,545 births, or over 75 per cent. of those born in the district. This is very gratifying, so far as it goes.

On the other hand among the causes of death under one year in this district the group Congenital Malformations, Congenital Debility, Premature Birth and injury at Birth, includes more than half the total deaths. Prevention in this group appears to be largely in ante-natal care and it seems the usefulness of the clinics could be increased if local practitioners could be invited to assist in ante-natal work in conjunction with the clinics as suggested by the Director of Maternal and Baby Welfare in the report above quoted.

Ante-natal clinics might also be established at the seven public hospitals in the district and beds provided for admission of patients for observation or treatment as required. This appears to be a matter for consideration by the Hospitals Commission.

Maternal Mortality.—The deaths from causes connected with childbirth numbered 25, showing a death rate of 5·83 per thousand births, compared with an annual average of 6·18 during the previous five years.

Chief among the causes of death in this group is puerperal septicaemia, and next come the toxæmias of pregnancy and puerperal haemorrhage. It would be of interest to ascertain what proportion of the septicaemia cases follow plugging, etc., for the control of haemorrhage, ante or post partum, i.e., to what extent puerperal haemorrhage is the primary cause leading to death from septicaemia. Information on this point should be available from the investigations of maternal deaths now being carried out. The number of cases investigated in Newcastle and suburbs is too small to afford much evidence on this point.

It has been stated that eclampsia is more severe in type in this country than elsewhere and that many cases of albuminuria during pregnancy give a previous history of scarlet fever. Investigation of the hospital records on this point might be of value with a view to more rigid isolation of scarlet fever cases than is at present practised, if the connection is established.

Private Hospitals.—At the end of the year 51 private hospitals were licensed in the district, 42 being for the reception of lying-in cases only, while 9 were licensed to receive medical and surgical cases as well. The total number of beds available in these hospitals was 301.

The administration of the Private Hospitals Act is controlled from Head Office, Sydney, and inspections were carried out at intervals by Nurse Inspectors from Head Office Staff. Other inspections were carried out by me at the instance of the Head Office in the case of applicants desiring to license premises not previously licensed, and in the case of hospitals from which patients with puerperal pyrexia were reported.

There can be no doubt that the establishment of maternity wards at well equipped public hospitals, which has been several times suggested recently, would be of advantage to the public, as many of the small maternity hospitals at present licensed are poorly equipped to deal with emergencies, and it is not uncommon for complicated cases to be removed from smaller to larger hospitals, while the patient is in a serious condition, on account of the better facilities available at the larger hospitals. The new regulations under the Private Hospitals Act, which are under consideration, will probably, when brought into force, do much to improve the smaller hospitals.

Pure Food Act.—Numerous inspections by staff of this office were made during the year, and increased activity by the municipal inspectors was noted, particularly in the submission of samples for analysis. An inspector from the Sydney Office visited the district at intervals, and afforded much valuable assistance, but the volume of work requiring attention is increasing to such an extent that the services of a full-time inspector, who would be able to work through the district constantly and systematically are becoming more and more necessary.

In addition to the work of the visiting inspector which is included in the report of the Chief Inspector under the Pure Food Act, appearing elsewhere (p. 19), condemnations of food found to be unfit for human consumption included 10 cwt. of deteriorated foodstuffs and 650 packages of assorted foods.

The administration of the Dairies Supervision Act passed from the control of this Department to that of the Department of Agriculture on 19th July, 1930. Several companies commenced the distribution of milk in bottles for the first time during the year. The quality of the milk supplied was on the whole satisfactory, although in a few cases it was found necessary to prosecute suppliers for infringements of the Pure Food Act.

Regarding the inspection of meat, the Newcastle district for a radius of 14 miles from the Newcastle District Abattoirs at Waratah, is supplied with sound meat from animals which are properly slaughtered under hygienic conditions and adequately inspected. Outside this area the methods of slaughter and inspection leave much to be desired. Very little progress was made towards the establishment of abattoirs

for the coalfields district of Cessnock and Maitland, owing to the inability of the Councils to reach an agreement. It now seems likely that temporary expedients will be adopted to meet the requirements of the Board of Health regarding improvements in the matter of meat inspection, and that these expedients will take the form of concentrating the killing in slaughter houses of an improved type in various centres, and the appointment of qualified meat inspectors at each of these centres to supervise the slaughtering of animals and the inspection of meat. At the end of the year, however, no definite arrangement had been come to.

Noxious Trades Act.—All premises licensed under the Noxious Trades Act were inspected at intervals during the year, and their supervision by Councils was found to be, on the whole, satisfactory. Owing to the financial depression and the necessity for reducing expenditure to the utmost, inspections of these scattered and outlying premises were not made so frequently as in previous years, but were sufficient to enforce the provision of necessary improvements, and the maintenance of premises in good order.

Venereal Disease.—No further progress was made at Newcastle during the year in the matter of providing adequate treatment of venereal disease. The facilities available at the Newcastle Hospital are still grossly inadequate, and throughout the year numbers of persons affected by the industrial depression and unable to pay, or to continue paying, for treatment have called on me seeking free treatment, and have had to be turned away, as no adequate free treatment is available nearer than Sydney. The Hospitals Commission has had the matter under consideration during the whole year, but no funds have been available to provide increased facilities for treatment. A public meeting held at Newcastle during the year was addressed by the Director of Venereal Diseases Division, and following this an attempt was made to arouse the interest of local bodies in the matter, but the whole question seems to hinge on the provision of funds, and the difficulties have been increased by the financial depression, so that the prospects of the establishment of the clinic seem at present to be as remote as ever, notwithstanding that it is probably the most urgent public health need of the district.

Miscellaneous.—During the year several hundred persons were medically examined for entrance into the Public Service, admission to State Hospitals, &c., but there was a considerable decrease in the examinations under the Workers' Compensation Act, owing to various causes.

A number of pathological examinations of sputum, &c., for local medical practitioners was carried out, but owing to the limited time available for the work in recent years, the total has been small, and part of this work is temporarily being carried out at the Newcastle Hospital pending the establishment of the proposed Public Health Laboratory in connection with that institution.

Under instructions from Head Office, visits were made outside the district to Somerton, Narrabri and Baan Baa, Lismore, Kyogle and Wangaree in connection with the examination of patients from the Coast Hospital; to Scone and Upper Rouchel in connection with a diphtheria outbreak; to Urunga in connection with cases of arsenical poisoning; to Bulladelah *re* diphtheria cases, and to Aberdeen *re* inspection of Meat Works.

H. G. WALLACE,
Medical Officer of Health.

3.—Broken Hill and District.

REPORT OF MEDICAL OFFICER OF HEALTH, W. E. GEORGE, M.B., Ch.M., FOR THE YEAR ENDED 31st DECEMBER, 1930.

The estimated population of the city for the year 1930 was 26,961. There were 732 births and the deaths numbered 286 (males, 200; and females, 86).

Infectious Diseases.—Typhoid and paratyphoid fever again show an increase. There was, however, a considerable reduction in the number of notifications of scarlet fever and diphtheria. Four cases of infantile paralysis were reported, as against one such case in each of the two preceding years.

Comparative figures for the last three years are as follows :—

						1928.	1929.	1930.
Typhoid and Paratyphoid Fever	...	...	...	...	...	49	64	95
Scarlet Fever	...	...	...	...	...	4	120	19
Diphtheria	...	...	...	...	...	17	96	37
Infantile Paralysis	...	...	...	...	...	1	1	4

Of the 95 cases of typhoid fever, no fewer than 53 occurred in January, February, and March of 1930, whereas during the last three months of the year there were only 12 cases. The mildness of the past summer has been responsible for the presence of fewer flies, and this may account to some extent for the decline in the incidence of this disease. There has been no noticeable improvement in the care of closets or treatment of garbage in the municipality, nor has there been any house-to-house inspection carried out by the local authority as recommended in the previous annual report.

During the year the Infantile Paralysis Committee in Sydney arranged for a supply of convalescent serum to be kept on hand at the laboratory. This serum is for use in the treatment of cases of this disease in the early preparalytic stage. It unfortunately happens that cases of poliomyelitis are usually only seen by a medical practitioner after the paralysis has developed. The use of serum at this late stage is rarely followed by beneficial results.

The laboratory continues to carry out useful work, both for the public hospital and for private practitioners in the city. There has been no alteration in the staff of the laboratory, which consists of the medical officer-in-charge and one laboratory assistant.

The total number of examinations carried out during the year was 5,627 (352 biochemical, 5,165 bacteriological, and 99 pathological). All necessary culture media, swabs, &c., have been prepared at the laboratory. Specimens for Wassermann and Kahn reactions to the number of 365 were forwarded for examination to the head office laboratory.

During the year I was absent from Broken Hill for about four months while attending the International Conference on Silicosis at Johannesburg, South Africa.

W. E. GEORGE,
Medical Officer of Health.

SECTION III.

REPORT upon the State Hospitals under the Control of the Director-General of Public Health.

1.—THE COAST HOSPITAL, SYDNEY: REPORT FOR THE YEAR 1930.

The Medical Superintendent to The Director-General of Public Health.

Sir,

I have the honor to submit the following Report on the working of the Coast Hospital during the year 1930.

The Staff during the year has been as follows :—

Honorary Medical Staff.

Honorary Physicians.—Alfred W. Campbell, M.B., M.S. (Edin.), M.D.; James McD. Gill, M.D. (Lond.), L.R.C.P. (Lond.), M.R.C.S. (Eng.); Hazlett H. Marshall, L.R.C.P.S. (Edin.), L.F.P.S. (Glas.), M.B., M.S. (Edin.); Alan W. Holmes à Court, M.D. (Syd.), M.R.C.P. (Lond.), Medaille d'Epidemies; Richmond Jeremy, M.B., Ch.M. (Syd.), M.R.C.P., (Lond.).

Honorary Surgeons—Sir Charles Clubbe, L.R.C.P. (Lond.), M.R.C.S. (Eng.); George H. Abbott, M.B., Ch.M. (Syd.); Sir Alexander MacCormiek, M.B., M.S., M.D. (Edin.), M.H.F.R.C.S. (Eng.), H.F.R.C.S. (Edin.); John C. Storey, M.B., Ch.M. (Syd.), F.R.C.S. (Eng.); Edward H. T. Thring, F.R.C.S. (Eng.), L.R.C.P. (Lond.); Harry C. Rutherford Darling, M.D. (Lond.), F.R.C.S. (Eng.); Earle C. G. Page, M.B. (Syd.); Thomas M. Furber, M.B. (Syd.); James H. W. Leadley, M.B., M.S. (Syd.); Frank W. Doak, L.R.C.P., L.R.C.S., (Edin.), L.F.P.S. (Glas.); John C. Shand, M.B., M.S. (Syd.); James M. Hair, M.B., M.S. (Syd.).

Honorary Gynæcologists.—Joseph Foreman, L.S.A. (Lond.), L.M.R.C.P. (Edin.), M.R.C.S. (Eng.); Ralph Worrall, M.D., M.S. (Ire.).

Honorary Ophthalmic Surgeons.—Charles G. McLecd, M.B., M.S. (Edin.); Albert T. Dunlop, M.B., M.S. (Syd.).

Honorary Ear, Nose, and Throat.—Herbert H. Johnston, M.B. (Syd.).

Honorary Dermatologists.—Wahab McMurray, M.D., M.S. (Ire.); Ewan Murray-Will, M.B., Ch.M. (Syd.).

Honorary Urologist.—Robert J. Silverton, M.B., M.S. (Syd.).

Honorary Radiographer.—(Vacant).

Honorary Orthopædic Surgeon.—Wilfred Vickers, M.B. (Syd.).

Resident Medical Staff.

Medical Superintendent.—Reginald J. Millard, M.B., Ch.M. (Syd.), D.P.H. (Camb.), C.M.G., C.B.E.

Deputy Medical Superintendent.—Robert M. McMaster, M.B., M.S. (Syd.), D.S.O.

Senior Medical Officers.—Cecil J. M. Walters, M.B., Ch.M. (Syd.); Robert J. W. Malcolm, M.B., M.S. (Syd.), resigned 1st May, 1930; Arthur A. Moon, M.B., Ch.M. (Syd.); Donald A. Cameron, M.B. (Syd.), appointed 7th April, 1930.

Junior Medical Officers.—8.

Dispenser, Miss E. M. Kirton, retired; Miss K. M. Legg appointed 19th September, 1930.

Manager.—Mr. W. Megarvey.

Matron, Miss C. M. Burne.

First Clerk, Mr. W. J. Gordon.

Sub-Matron, Miss C. M. Dickson, R.R.C.

Sisters, 14; Nurses, 222; other Female Staff, 68.

Asst. Sub-Matron, Miss V. K. Angus.

Attendants (Ward), 26; other Male Staff, 57.

STATISTICS.

Detailed tables of statistics will be found in the Appendix, but I may summarise here the more important of these.

I.—The following table is a comparative general statement for 1930 and the previous year :—

	1929.	1930.
Remaining in Hospital on 31st December	714	748
Admitted during the year	10,454	11,001
Total cases under treatment during the year	11,181	11,715
Discharges, including deaths	10,467	10,967
Deaths	713	760
Death-rate per cent. of total discharges	6·8	6·9
Average daily number of occupied beds	740	758
Average stay of patients (in days).....	24·1	25·2

For the year the number of admissions was 547 more than in 1929, and the average daily number of occupied beds was 758 as against 740 in 1929. The average stay of patients was 25·2 days.

II. *Infectious Diseases.*—The following table summarises the work of the year in regard to these, and affords a comparison with 1929. In this table the “cases” are cases treated until discharge or death, and the fatality is reckoned on the total cases treated. Cases remaining in hospital on 31st December, 1930, are not included in these figures for the year :—

	1929.			1930.		
	Cases.	Deaths.	Fatality.	Cases.	Deaths.	Fatality.
Typhoid Fever	52	3	5·77	27	3	11·11
Measles	234	18	7·69	566	58	10·24
Scarlet Fever	1,580	32	2·02	1,516	26	1·71
Whooping-cough	72	11	15·27	30	2	6·66
Diphtheria	1,129	29	2·56	1,180	15	1·27
Influenza	212	1	0·4	62	.....	.....
Erysipelas	119	12	10·08	132	10	7·57
Other Epidemic Diseases	100	.....	.....	55	4	7·27

Typhoid Fever.—The number of cases under treatment was less than in 1929; the fatality was higher. *Scarlet Fever.*—Was less prevalent than in 1929—2,980 cases being notified in the whole metropolitan area during 1930 as against 3,418 during 1929, and the cases treated at the Coast Hospital showed a corresponding decrease. There were 26 deaths.

Diphtheria.—In the Metropolis the cases notified amounted to 1,938 in 1930 as against 2,124 in 1929; and the cases treated at the Coast Hospital were 1,180 as against 1,111 in 1929. The percentage of notified cases which came to this hospital for treatment was—in 1929, 55·1 per cent.; and in 1930, 60·8 per cent. Of the 15 fatal cases, 13 died within seven days of admission. Intubation was performed on 71 patients and tracheotomy on 6.

Antitoxin was administered in the hospital to 1,071 cases in the doses shown in the following table :—

Antitoxin.	Cases.	Percentage of Total Cases.	Antitoxin.	Cases.	Percentage of Total Cases.
2,000 units	1	·09	40,000 units ...	13	1·2
4,000 „	28	2·6	42,000 „ ...	2	·19
6,000 „	74	6·9	44,000 „ ...	1	·09
8,000 „	238	22·2	46,000 „ ...	3	·28
10,000 „	179	16·7	48,000 „ ...	.....	.....
12,000 „	177	16·5	50,000 „ ...	7	·65
14,000 „	16	1·5	52,000 „ ...	1	·09
16,000 „	109	10·1	54,000 „ ...	1	·69
18,000 „	7	·65	56,000 „ ...	.....	.....
20,000 „	107	9·9	58,000 „ ...	3	·28
22,000 „	14	1·3	60,000 „ ...	6	·56
24,000 „	4	·37	62,000 „ ...	1	·09
26,000 „	3	·28	64,000 „ ...	2	·19
28,000 „	3	·28	66,000 „ ...	3	·28
30,000 „	56	5·2	70,000 „ ...	2	·19
32,000 „	3	·28	80,000 „ ...	3	·28
34,000 „	1	·09	100,000 „ ...	.....	.....
36,000 „	3	·28	110,000 „ ...	.....	.....
38,000 „ .....	.....	.....	

Altogether 3,388 cases of typhoid fever, measles, scarlet fever, diphtheria, influenza, meningitis, and whcoping cough were treated. In the Appendix will be found some further details of these cases, viz. :—

Table III.—Age and sex distribution of cases discharged or died during the year.

Table IV.—Number of cases of diphtheria, scarlet fever, and typhoid notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital in each of the years 1917–1930, inclusive.

Table V.—Duration of stay in hospital of cases of typhoid fever, measles, scarlet fever, whooping cough, and diphtheria.

Table VI.—Fortnightly admissions of all patients during 1930.

Table VII.—Classification of diseases treated during 1930.

Table VIII.—Operations performed during 1930.

Table XI.—Summary table showing the work of the Coast Hospital and its cost each year from 1886 to 1930.

Abortion.—During the year 887 patients were treated for abortion. The admissions for this condition have increased of late years at a startling rate, as indicated by the following figures, which show the ratio of abortion cases to all female cases treated in successive years 1921–1930, inclusive:—

Year.	Total females treated.	Abortions.	Percentage.	Year.	Total females treated.	Abortions.	Percentage.
1921	3,210	237	7·38	1926	5,550	620	11·1
1922	3,426	354	10·3	1927	5,759	581	10·0
1923	4,289	381	8·8	1928	5,302	572	10·7
1924	4,325	436	10·0	1929	5,575	755	13·5
1925	4,602	497	10·8	1930	6,090	887	14·5

3. *Expenditure.*—Table IX gives a detailed statement of the working expenses for 1929 and 1930, from which it will be seen that the total expenditure decreased from £127,721 5s. 1d. in 1929 to £123,056 19s. 7d. in 1930, and the average cost per occupied bed decreased from £172 11s. 10d. to £162 6s. 10½d.

Instruction by lectures and demonstrations was, as usual, given to the Nurses by the Medical Staff and Matron; and in invalid cookery by a specially engaged teacher (Miss Shepherd), as in former years. Examinations were held in accordance with regulations, and nurses passed as follows:—

First-year examination	...	...	...	...	...	...	...	...	46
Second-year	„	...	...	...	...	...	...	...	40
Third-year	„	...	...	...	...	...	...	...	42
Fourth-year	„	...	...	...	...	...	...	...	45

During the year 45 certificated nurses left the hospital to take up private nursing, or to take positions in other hospitals. In addition to these, 5 Coast Hospital nurses passed the N.R.B. Obstetric Examination, after having the necessary training at Montrose Hospital, whilst 39 nurses passed the Nurses Registration Board Examination in General Nursing.

Sick leave was granted to 112 nurses, amounting in the aggregate to 2,635 days. Of these nurses some were ill on more than one occasion, there being 153 cases of illness altogether. Of the sick nurses 3 had diphtheria, 83 days; 13 had scarlet fever, 709 days. All the nurses recovered satisfactorily.

5. *Laboratory.*—The following Table summarises the work done in the hospital laboratory month by month. In all, 13,408 cultures were examined for diphtheria. The practice was continued of accepting no diphtheria culture as negative unless found so after forty-eight hours' incubation.

1930.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total:
Cultures examined for diphtheria—													
1. After 12–24 hours' incubation	1,038	806	1,045	1,309	1,195	1,160	1,230	1,255	1,178	1,130	1,060	1,002	13,408
2. Negative after 12–24 hours' incubation, and re-examined after 48 hours ...	815	676	795	1,080	985	911	1,012	1,021	939	964	810	820	10,828
3. Positive for diphtheria at second examination	41	28	11	38	18	21	36	13	20	20	12	16	274
4. Percentage of positives in second examination	5·03	4·14	1·38	3·52	1·83	2·31	3·56	1·27	2·13	2·07	1·48	1·95	2·53
Blood—Full counts	21	28	22	30	36	29	28	28	33	29	19	18	321
Leucocyte counts ...	42	39	44	41	45	40	73	84	73	56	97	77	711
Parasites, &c.	3	6	5	2	3	1	2	4	1	1	7	3	38
Cultures	7	11	18	7	3	7	10	6	13	9	8	14	113
Widals	10	13	14	11	11	5	8	13	13	7	11	47	163
Fluids—Cerebro-spinal	14	6	3	6	14	7	11	8	15	18	12	10	124
Body fluids	13	11	7	7	2	5	9	4	7	8	9	11	93
Fæces	3	13	4	6	3	2	16	4	3	6	4	11	75
Pus—For organisms, &c. ...	104	48	39	46	52	48	38	70	46	96	91	76	754
Smears—Gonococci	114	96	83	83	80	62	83	45	64	85	74	85	954
Leprosy .....	...	...	...	...	1	1	...	...	4	...	...	...	6
Diphtheria and Vincent's Angina ...	4	...	6	1	...	9	7	10	9	5	5	4	60
Sp. pallidum	7	7	9	3	2	5	...	6	4	2	5	3	53
Hairs and Scales for fungi ...	1	2	1	...	...	...	2	...	...	2	...	1	9
Sputum for T.B.	113	77	41	87	114	129	161	141	125	139	122	172	1,421
Urine—Bacteriological	4	1	...	1	1	...	...	...	...	...	...	3	10
Bacteriological and pus, &c.	35	56	31	25	26	25	21	32	28	46	1	4	330
Deposits only	21	27	66	33	70	50	51	56	61	50	96	92	673
Chemical	11	7	2	19	8	6	6	2	...	2	8	2	73
Vaccines prepared .....	...	3	5	4	5	1	1	2	7	1	4	3	36
Blood—Sugar	125	127	113	88	204	142	172	118	183	174	160	152	1,758
Typing for trans fusion	9	3	9	4	2	28	22	26	18	26	4	5	156
Totals	2,514	2,063	2,362	2,893	2,862	2,673	2,963	2,935	2,824	2,856	2,607	2,615	32,167

The Principal Works carried out at the hospital during 1930 were as follows :—

Work performed by the Public Works Department.

- Extension of Laundry Building, alteration of machinery and installation of two additional washing machines and crection of drying cabinet.
- Installation of new X-ray Plant.
- Replacement of galvanised-iron roof, Female Staff Quarters, by fibro-cement sheets.
- Replacement of galvanised-iron roof, Ward XVII.
- Provision of hot water service, Ward No. 1, Laundry.
- Supply of washing machine and wringer, Ward No. 1.
- Alteration of position of single room, Ward VIII, and sundry other work of minor nature, including the painting of wards and quarters.
- In addition the erection of Medical Officers' Quarters was commenced and remodelling of the old refrigerator was in hand before the end of the year.

Work performed by the Hospital Staff.

In addition to carrying out the repair, minor alterations of plant, furniture, buildings, &c., the hospital staff performed the undermentioned works :—

- Installing and connecting washing machine, Ward I.
- Removal old X-ray Plant.
- Rewiring and conduiting X-ray Room.
- Installing 4,000-gallon oil tank.
- Lecture Hall—Laying new flooring, verandah.
- Coast Hospital Auxiliary, Randwick—Laying turf tennis court, and erecting 9-ft. fence to enclose same.
- Manager's Quarters—Renovating cottage, internally.
- Male Lazaret—Erecting projecting room for cinema.
- Wards IX and X—Fixing new fibro-cement ceiling and renovating lavatory block internally.
- Laundry—Constructing one chain of road to new oil tank.
- Ward XVII—Removing wooden piers and erecting brick foundation.

Dairy.—During the year 27,538 gallons of milk were produced, valued at £2,237 9s. 3d.

Vegetable Garden.—76,526 lb. of vegetables, valued at £478 5s. 9d., were produced in the vegetable garden attached to the hospital.

During the year the Smith Family was instrumental in adding to the radio equipment already in use by the provision of three 7-valve receivers provided with loud speakers and head-sets for use in Wards XV, XX and XXI and the Nurses' Quarters, Infectious Division.

This organisation is to be thanked also for the installation of a complete cinema apparatus at the Male Lazaret.

W. MEGARVEY, Manager. I have, &c., R. J. MILLARD, Medical Superintendent.

TABLE I.—General Statement of the working of the Hospital from 1st January to 31st December, 1930.

	Males.	Females.	Total.
Number of beds available in the General Division on 31st December, 1930.....	274	271	545
„ „ Infectious Division .....	.....	.....	211
„ „ Nurses' Sick Room .....	.....	4	4
Coast Hospital Auxiliary, Randwick	90	30	120
Total accommodation .....	.....	.....	80
Number of inmates remaining in hospital on 31st December, 1929...	316	368	714
„ admitted during the year 1930	4,894	6,107	11,001
Total treated	5,240	6,475	11,715
Discharged—Cured	2,481	4,162	6,643
„ Relieved.....	1,789	1,401	3,190
„ Unrelieved	138	161	299
„ No Disease.....	35	40	75
Died	434	326	760
Total number discharged, or who died.....	4,877	6,090	10,967
Remaining in hospital on 31st December, 1930.....	363	385	748

Average daily number resident	758
Average residence of discharged patients in days	25.2
Rate of mortality on total number who were discharged or who died	6.9
Total cost of maintenance and treatment of indoor patients	£123,056 19s. 7d.
Average cost of patients per annum	£162 6s. 10½d.

Out-patients—	Males.	Females.	Total.	Total Visits.
Total number of individuals who received treatment	1,201	1,298	2,499	4,128
Venereal Disease .....	.....	.....	.....	7,138
Night Clinic at Health Depot .....	.....	.....	.....	10,332
Total cost of Out-patient treatment .....	.....	.....	.....	£745 3s. 1d.

Hospital Staff on 31st December, 1930.

Medical and Administrative.	Number.	Nursing.	Number.	General.	Number.
Medical Superintendent	1	Sub-Matron	1	Gardeners	3
Deputy Medical Superintendent	1	Asst. Sub-Matron	1	Herdsmen	1
Assistant Medical Officers	11	Sisters—		Foreman	1
Manager	1	Senior	8	Artisans	12
Matron	1	Junior	6	Attendants, Outdoor	21
Dispensers	3	Nurses—		Telephone	
Clerks	10	Staff	24	Attendants	4
Laboratory Assistants	2	Pupil	198	Male Cooks	4
X-Ray Assistant	1	Ward		Female Cooks	8
Storekeeper	1	Attendants	26	„ Servants	38
		Honsekeeper	1	Laundresses	13
		Masseuse	1	Needlewomen	3
Total	32		266		108
				Total Staff	406

TABLE II.—Return showing the number of Wards, together with the cubic space and number of beds in each Ward, in the General and Infectious Divisions of the Coast Hospital for the year 1930.

Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed in Ward.	Ward.	Cubic Space.	No. of Beds.	Cubic Space per Bed in Ward.
1	77,788	91	855	16	11,520	13	886
3	12,000	10	1,200	17	16,915	30	564
4	12,900	11	1,173	18 and verandah	53,062	50	1,263
5 and gallery	31,368	25	1,254	19 and verandah	53,062	50	1,263
6	10,800	8	1,350	20 and verandah	53,062	50	1,263
7	10,800	8	1,350	21 and verandah	53,062	50	1,263
8 and gallery	32,268	24	1,344	23 and verandah	53,062	50	1,263
9	12,000	8	1,500	24	19,023	25	761
10 and N. Sick Room	16,356	14	1,168	25	19,023	25	761
11	22,320	26	858	26	19,023	25	761
12	23,880	28	853	27	19,023	25	761
13	28,236	41	688				
14	43,520	43	1,012	Total	732,369	760	
15	28,296	30	943				

Coast Hospital Auxiliary, Randwick.

Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed.
23	23,415	24	975
24	23,415	24	975
26	23,415	24	975
28	23,415	24	975

These figures do not include 6 beds on the verandah of each ward.

TABLE III.—Discharges and Deaths during 1930, distributed under sex and age.

	Age.		0-5		6-10		11-15		16-20		21-30		31-40		41-50		51-60		61-70		71-80		81-90		Total sexes.		Total cases treated.	Total deaths.	Mortality per cent.		
	Sex.		M	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Male.	Female.					
1. Infectious Diseases—																															
		Typhoid Fever—																													
		Discharges .....	...	...	...	...	1	3	5	2	4	5	...	1	...	...	1	...	...	1	...	...	...	...	12	12	27	3	11.11
		Deaths .....	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1			
		Measles—																													
		Discharges	152	161	62	60	7	12	10	9	16	13	3	2	...	...	...	...	...	...	...	...	...	...	250	258	566	58	10.24
		Deaths	35	20	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37	21				
		Scarlet Fever—																													
		Discharges	208	291	121	283	33	122	28	67	61	162	26	62	9	11	1	4	...	...	...	...	...	...	487	1,003	1,516	26	1.71
		Deaths	12	9	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	15	11			
		Whooping Cough—																													
		Discharges	10	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	18	30	2	6.6
		Deaths	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1				
		Diphtheria—																													
		Discharges	330	305	152	168	23	52	4	24	21	41	11	22	2	5	3	1	...	...	...	...	...	...	546	619	1,180	15	1.27
		Deaths	4	5	1	1	1	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	...	7	8			
		Influenza—																													
		Discharges .....	...	1	...	...	3	2	5	4	8	14	3	8	5	3	1	1	2	1	...	...	...	...	27	35	62	...	...
		Deaths					
			Plague—																												
		Discharges				
		Deaths.....				
		Cerebro-spinal Meningitis—																													
		Discharges .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	7	5	71.42
		Deaths	1	1	1	1	...	1	3	...						
		2. Other Diseases—																													
		Discharges	141	127	99	72	207	127	326	372	775	1,239	467	869	470	503	315	278	211	165	82	52	15	3,109	3,819	7,579	651	8.58			
		Deaths	16	11	4	1	4	3	13	12	38	48	43	52	69	40	70	51	72	47	31	13	4	369	282						
Totals			910	949	442	587	280	321	392	491	926	1,523	553	1,017	557	566	393	335	285	216	114	66	25	19	4,877	6,090	10,967	760	...		

TABLE IV.—Showing Number of Cases of Diphtheria, Scarlet Fever, and Typhoid Fever notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital, in each of the years 1916-1930 inclusive.

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
<i>Diphtheria.</i>															
Cases notified in Metropolis...	2,829	2,576	2,399	988	1,825	2,916	1,807	1,722	2,115	1,626	2,048	2,112	2,028	2,124	1,938
Cases treated at Coast Hospital.	1,149	1,259	1,241	501	834	1,360	905	854	1,115	787	1,018	997	1,123	1,111	1,180
Percentage.....	40·6	48·8	51·7	50·72	45·6	46·6	50	49·5	52·7	48·4	49·7	47·2	53·8	52·3	60·8
<i>Scarlet Fever.</i>															
Cases notified in Metropolis...	2,715	1,217	765	424	468	511	653	1,541	2,241	1,916	3,424	5,840	3,729	3,418	2,980
Cases treated at Coast Hospital.	968	564	333	174	167	174	229	622	1,045	842	1,668	2,183	1,723	1,572	1,516
Percentage.....	35·7	46·3	43·5	41·04	35·6	34	35	40·4	46·6	43·9	48·7	37·4	46·2	46·0	52·5
<i>Typhoid Fever.</i>															
Cases notified in Metropolis...	654	403	327	335	366	342	246	265	242	230	245	184	133	185	118
Cases treated at Coast Hospital.	79	21	41	20	56	49	33	51	58	50	60	33	22	53	27
Percentage.....	12	5·2	12·5	5·97	15·3	14·3	13·4	19·2	23·9	21·7	24·4	18	16·6	28·6	22·9

TABLE V.—Duration of Stay in Hospital of cases of Typhoid Fever, Measles, Scarlet Fever, Whooping Cough, and Diphtheria.

Duration of Stay.	Typhoid Fever.			Measles.			Scarlet Fever.			Whooping Cough.			Diphtheria.		
	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.
1 week or less	...	1	1	42	25	67	12	9	21	2	...	2	93	13	106
1—2 weeks..	2	...	2	295	16	311	7	2	9	5	...	5	264	2	266
2—3 „	1	1	2	81	5	86	26	7	33	5	...	5	448	...	448
3—4 „	3	1	4	38	8	46	447	2	449	4	...	4	182	...	182
4—5 „	7	...	7	21	2	23	589	2	591	3	...	3	78	...	78
5—6 „	3	...	3	10	1	11	166	2	168	4	1	5	39	...	39
6—7 „	2	...	2	8	...	8	73	1	74	1	...	1	31	...	31
7—8 „	1	...	1	5	...	5	58	1	59	1	1	2	8	...	8
8—9 „	1	...	1	4	...	4	34	...	34	2	...	2	9	...	9
9—10 „	1	...	1	2	1	3	23	...	23	1	...	1	6	...	6
10—11 „	1	...	1	...	...	...	8	...	8	...	...	...	1	...	1
11—12 „	2	...	2	...	...	...	13	...	13	...	...	...	3	...	3
12—13 „	...	...	...	...	...	...	8	...	8	...	...	...	2	...	2
13—14 „	...	...	...	1	...	1	5	...	5	...	...	...	...	...	...
14—15 „	...	...	...	...	...	...	9	...	9	...	...	...	...	...	...
15—16 „	...	...	...	...	...	...	7	...	7	...	...	...	...	...	...
16—17 „	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
17—18 „	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
18—19 „	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
19—20 „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20—21 „	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
21—22 „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22—23 „	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
23—24 „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24—25 „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25—26 „	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...
Over 26 „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	24	3	27	508	58	566	1,490	26	1,516	28	2	30	1,165	15	1,180

TABLE VI.—Fortnightly Admission of Cases during 1930.

	Fortnight ending—																											
	Jan.		Feb.		March		April.		May.		June.			July.		Aug.		Sept.		Oct.		Nov.		Dec.			Total.	
	14	28	11	25	10	24	7	21	5	19	2	16	30	14	28	11	25	8	22	6	20	3	17	1	15	31		
Typhoid Fever	2	...	2	1	3	2	2	2	...	1	...	1	1	1	...	1	1	1	...	1	...	...	...	2	3	4	31
Measles	13	13	9	4	4	7	2	2	2	3	1	3	16	18	13	16	23	38	47	47	52	66	76	41	34	29	579	
Scarlet Fever	65	47	65	33	48	49	58	64	50	41	73	61	49	65	70	77	80	68	66	48	52	59	66	57	74	50	1,535	
Whooping Cough	9	4	2	...	1	2	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	...	23
Diphtheria	31	45	54	41	63	52	85	51	69	65	68	58	58	38	66	39	57	45	39	28	31	27	22	19	24	2	1,177	
Influenza .....	...	4	3	...	3	...	3	...	...	...	2	3	...	...	3	4	6	7	6	4	3	4	3	3	2	...	63
Other Diseases ..	311	316	242	355	296	307	320	303	350	290	304	284	244	301	281	315	277	303	302	302	328	305	335	279	213	130	7,593	
Total.....	431	429	377	434	418	419	472	422	471	400	448	410	369	423	433	452	444	462	460	430	466	461	502	401	352	215	11,001	

TABLE VII.—Return of the Number of Persons under Treatment, the Order of Disease for which they were treated, and the Number of Deaths in each Order during the year 1930. (Includes cases remaining in Hospital on 31st December, 1929.)

	Discharged during the year.				Remaining in on 31st December, 1929.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 1.—GENERAL DISEASES.							
Typhoid Fever	24	...	...	3	5	27	41.14
Malaria	1	4	...	...	...	5	17.2
Measles	499	9	...	58	28	566	15.45
Scarlet Fever	1,462	28	...	26	170	1,516	35.26
Whooping-cough	20	8	...	2	...	30	29.4
Diphtheria	1,146	19	...	15	44	1,180	20.11
Influenza	54	8	...	...	1	62	10.69
Mumps.....	7	...	...	...	...	7	17.0
Dysentery .....	...	...	...	1	1	1	6.0
Erysipelas	114	7	1	10	4	132	14.03
Other Epidemic Diseases	46	4	1	4	2	55	16.58
Purulent Infection and Septicæmia	1	...	...	5	1	6	18.33
Anthrax .....	...	...	...	...	...	...	...
Tetanus .....	...	...	...	4	1	4	1.75
Rickets .....	...	...	...	...	...	...	...
Lethargia .....	...	1	...	2	...	3	8.66
Tuberculosis of the Lungs	1	145	40	162	91	348	72.89
" Acute Miliary.....	...	...	...	1	...	1	3.0
" Meningitis .....	...	...	...	2	...	2	6.0
" Pott's Disease .....	...	8	1	...	...	9	338.11
" Hips.....	1	1	...	...	8	2	26.50
" Other	1	14	2	2	2	19	50.84
Poliomyelitis... ..	...	3	...	2	1	5	27.0
Syphilis .....	...	151	16	18	10	185	32.9
Soft Chancre	4	2	...	...	1	6	25.0
Gonorrhœal Disease	7	669	3	...	55	679	34.29
Cancer, &c., of the Mouth	1	3	9	1	...	14	16.0
" of the Stomach and Liver	2	9	14	10	4	35	27.0
" of the Peritonæum, Intestines, and Rectum	2	9	10	12	...	33	25.54
" of the Female Genital Organs	2	11	22	4	...	39	17.23
" of the Breast	3	7	4	...	...	14	28.92
" of the Skin	2	1	4	...	...	2	28.57
" of other Organs	3	11	9	15	1	38	23.84
Tumours	7	3	3	1	3	14	19.42
Acute Rheumatism.....	30	33	1	1	10	65	28.65
Chronic Rheumatism and Gout	3	68	1	1	1	73	31.0
Diabetes	1	132	2	15	20	150	50.71
Exophthalmic Goitre	1	7	...	1	...	9	33.11
Hodgkin's Disease	1	2	4	5	...	12	23.83
Anæmia, Chlorosis	1	16	1	2	1	20	42.95
Leprosy .....	...	...	...	...	...	...	...
Alcoholism, Acute and Chronic	5	7	1	1	...	14	5.85
Other Chronic Poisoning and Lead.....	...	7	...	...	...	7	26.28
Other General Diseases	1	3	1	2	...	7	7.0
Diseases of Spleen.....	...	...	...	...	1	...	...
Addison's Disease .....	...	1	...	...	...	1	14.0
Diseases of Pituitary Glands .....	...	...	...	...	...	...	...
Total, Class 1	3,453	1,411	150	388	466	5,402	...
CLASS 2.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.							
Meningitis .....	...	...	...	2	1	2	10.0
Cerebro-spinal Meningitis	2	...	...	5	1	7	20.14
Other Diseases of the Spinal Cord .....	...	1	...	2	...	3	107.33
Cerebral Hæmorrhage .....	...	15	2	25	6	42	21.57
General Paralysis of Insane.....	...	...	...	...	...	...	...
Other forms of Mental Alienation	1	1	2	...	...	4	7.50
Epilepsy .....	...	7	1	...	2	8	10.37
Chorea.....	3	5	...	...	...	8	61.0
Locomotor Ataxia.....	...	...	2	...	...	2	1.50
Neuralgia and Neuritis.....	3	19	1	...	...	23	24.34
Other Diseases of the Nervous System	4	47	11	1	...	63	19.33
Diseases of the Eye and Adnexa.....	6	4	2	...	...	12	6.58
Diseases of the Ear	32	36	1	2	4	71	24.85
Encephalitis	1	2	1	3	...	7	15.42
Cerebral Embolism and Thrombosis	1	15	2	3	2	21	29.76
Infantile Convulsions under 5.....	...	...	...	...	...	...	...
Total, Class 2	53	152	25	43	16	273	...
CLASS 3.—DISEASES OF THE CIRCULATORY SYSTEM.							
Angina Pectoris .....	...	2	...	...	...	2	4.50
Acute Endocarditis	1	4	...	5	...	10	32.0
Organic Diseases of the Heart	1	140	6	56	6	203	28.65
Diseases of the Arteries, Atheroma, &c. ....	...	2	...	...	...	2	65.0
Embolism and Thrombosis	1	1	...	2	5	4	36.0
Diseases of the Veins (Varices, Ulcer, and Hæmorrhoids)...	43	15	3	...	2	61	15.68
Diseases of the Lymphatic System	2	3	2	...	...	7	22.0
Hæmorrhage	1	...	...	1	1	2	32.0
Pericarditis.....	...	...	...	2	...	2	16.50
Aneurism.....	...	1	...	...	2	1	28.0
Arteriosclerosis	1	23	2	8	1	34	35.85
Other Diseases—Circulatory System.....	...	3	1	4	8	8	17.75
Total Class 3	50	194	14	78	25	336	...

TABLE VII.—Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1929.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 4.—DISEASES OF THE RESPIRATORY SYSTEM.							
Diseases of the Nasal Fossæ	25	51	2	1	...	79	9.49
Diseases of the Larynx	3	2	...	...	...	5	13.0
Capillary Bronchitis.....	2	...	...	1	...	3	12.33
Acute Bronchitis	28	11	...	...	2	39	13.28
Chronic Bronchitis .....	...	53	...	5	1	58	22.89
Broncho-Pneumonia	22	...	1	11	11	34	14.67
Pneumonia	125	10	...	36	12	171	18.22
Pleurisy	40	19	...	1	3	60	55.26
Asthma	3	42	1	5	5	51	19.54
Other Diseases of the Respiratory System .....	...	12	...	3	6	15	36.0
Congestion and Gangrene of Lung .....	...	...	...	2	...	2	7.50
Bronchitis, Unspecified	5	2	...	...	...	7	9.42
Total, Class 4	253	202	4	65	40	524	...
CLASS 5.—DISEASES OF THE DIGESTIVE SYSTEM.							
Gastritis	5	4	...	...	7	9	10.55
Diseases of the Teeth and Gums .....	...	...	...	...	...	...	...
Diseases of the Mouth and its Associated Organs	7	7	2	...	...	16	6.37
Diseases of the Pharynx	404	37	3	2	...	446	8.20
Ulcer of the Stomach	10	41	3	6	8	60	24.36
Other Diseases of the Stomach (Cancer excluded)	4	12	...	1	4	17	21.76
Diarrhœa and Enteritis (children under two years only)	8	...	...	3	...	11	8.81
Diarrhœa and Enteritis (children over two years and adults).....	33	7	...	2	...	42	11.42
Appendicitis	446	13	3	11	18	473	16.89
Hernia, Intestinal Obstruction	101	12	7	13	2	133	23.92
Other Diseases of the Intestines	18	33	2	3	26	56	17.28
Diseases of the Anus and Fæcal Fistulæ .....	...	...	...	...	5	...	...
Cirrhosis of the Liver .....	...	6	2	3	1	11	17.18
Biliary Calculi	50	30	3	2	...	85	27.43
Other Diseases of the Liver.....	25	37	3	2	6	67	20.56
Simple Peritonitis (non-puerperal)	1	6	...	2	...	9	16.11
Hydatid undefined	1	1	...	...	...	2	38.0
Other Diseases of Digestive System	5	9	...	5	1	19	23.68
Oesophagus, Stricture of.....	...	...	...	...	...	...	...
Ulcer of Duodenum	3	23	1	2	2	29	22.0
Total, Class 5	1,121	278	29	57	80	1,485	...
CLASS 6.—DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA (NON-VENEREAL).							
Acute Nephritis.....	10	12	...	3	11	25	33.16
Uterine Hæmorrhage	11	13	...	...	1	24	13.58
Other Diseases of the Kidneys and their Adnexa	57	86	4	4	20	151	15.20
Calculi of the Urinary Passages	16	24	4	2	3	46	30.93
Diseases of the Bladder	8	13	1	...	...	22	9.90
Other Diseases of the Urethra, Urinary Abscess, &c. ...	14	39	3	1	1	57	14.94
Diseases of the Prostate	11	31	2	9	6	53	31.98
Non-venercal Diseases of the Male Genital Organs.....	34	12	4	...	...	50	15.16
Salpingitis and Pelvic Abscess	94	116	7	4	7	221	19.86
Uterine Tumour (non-Cancerous)	21	8	1	2	...	32	19.06
Other Diseases of the Uterus .....	...	...	...	...	...	...	...
Cysts and other Ovarian Tumours.....	29	4	1	...	3	34	22.67
Other Diseases of the Female Genital Organs	59	47	8	...	5	114	18.59
Non-puerperal Diseases of the Breast (cancer excepted)...	9	1	...	...	...	10	18.0
Chronic Nephritis.....	3	29	2	34	...	68	20.13
Total, Class 6	376	435	37	59	57	907	...
CLASS 7.—PUERPERAL CONDITIONS.							
Abortion.....	824	43	4	16	18	887	3.88
Ectopic Gestation.....	31	1	...	2	3	34	22.11
Hyperemesis .....	...	...	...	...	...	...	...
Pyelitis .....	...	...	...	...	6	...	...
Hæmorrhage	1	3	...	...	1	4	9.50
Retroversion .....	...	...	...	...	1	...	...
Albuminuria	6	3	...	...	...	9	11.88
Pregnancy	6	14	2	1	...	23	9.65
Other Accidents of Labour.....	2	5	...	...	...	7	23.80
Puerperal Diseases of the Breast	3	2	...	...	...	5	22.60
Puerperal Septicæmia	3	1	...	13	1	17	29.29
Total, Class 7	876	72	6	32	30	986	...
CLASS 8.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.							
Gangrene	2	...	...	1	...	3	18.66
Phlegmon, Acute Abscess	78	39	1	2	...	120	23.19
Other Diseases of the Skin and Adnexa	113	101	4	2	5	220	19.04
Scabies .....	...	...	...	...	...	...	...
Furuncle	19	11	...	1	...	31	14.90
Elephantiasis.....	...	...	...	...	...	...	...
Total, Class 8	212	151	5	6	5	374	...

TABLE VII.—Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1929.	Total.	Average number of days in Hospital
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 9.—DISEASES OF THE ORGANS OF LOCOMOTION.							
Non-tuberculous Disease of the Bones	19	50	1	4	...	74	66.51
Arthritis and other Diseases of the Joints (Tuberculosi. and Rheumatism excepted).....	11	19	1	...	11	31	29.0
Other Diseases of the Organs of Locomotion	14	11	...	...	...	25	29.22
Total, Class 9	44	80	2	4	11	130	...
CLASS 10.—MALFORMATIONS.							
Congenital Malformations .....	...	...	1	...	1	1	9
Total, Class 10 .....	...	...	1	...	1	1	9
CLASS 11.—DISEASES OF EARLY INFANCY.							
Total, Class 11	2	3	...	...	...	5	4.60
CLASS 12.—OLD AGE.							
Senility .....	...	2	3	3	...	8	19.37
Total, Class 12 .....	...	2	3	3	...	8	...
CLASS 13.—VIOLENCE.							
Lysol Poisoning.....	...	...	...	...	...	...	...
Scalds and Burns (other than fire).....	14	5	...	1	1	20	17.05
Poisoning by Food (not ptomaine)	9	...	...	...	...	9	2.77
Bite of Snake or Insect	2	...	...	...	...	2	5.50
Firearms Accidents	2	1	...	...	...	3	28.0
Cutting Instruments.....	10	6	1	...	...	17	9.64
Burning by Fire.....	...	1	...	1	1	2	8.0
Falls	49	47	2	13	...	111	26.67
Crushings	8	9	...	...	...	17	17.88
Railways and Tramways and Motor	23	11	1	2	...	37	21.05
Injuries by Vehicles and Horses.....	10	3	...	...	...	13	20.15
Shock	1	1	...	1	...	3	4.03
Other Injuries	3	1	...	...	...	4	4.50
Assault	1	...	...	...	...	1	7.0
Fractures (not obtainable)	7	5	1	...	4	13	50.84
Other Acute Poisonings (except gas).....	3	...	...	3	...	6	4.66
Total, Class 13	142	90	5	21	6	258	...
CLASS 14.—ILL-DEFINED DISEASES.							
Malnutrition .....	...	...	...	...	...	...	...
Debility .....	...	...	...	...	...	...	...
Marasmus .....	...	...	...	...	...	...	...
Observation	61	120	18	4	10	203	12.56
No disease .....	...	...	...	...	...	17	5.47
Nurslings with mothers, no disease .....	...	...	...	...	...	58	18.27
Mothers with nurslings, no disease.....	...	...	...	...	1	...	...
Total, Class 14	61	120	18	4	11	278	...
SUMMARY.							
Total, Class 1.—General Diseases	3,453	1,411	150	388	466	5,402	...
„ 2.—Diseases of the Nervous System and of the Organs of Special Sense	53	152	25	43	16	273	...
„ 3.—Diseases of the Circulatory System	50	194	14	78	25	336	...
„ 4.—Diseases of the Respiratory System ...	253	202	4	65	40	524	...
„ 5.—Diseases of the Digestive Organs	1,121	278	29	57	80	1,485	...
„ 6.—Diseases of the Genito-Urinary System and Adnexa	376	435	37	59	57	907	...
„ 7.—Diseases of the Puerperal Condition ...	876	72	6	32	30	986	...
„ 8.—Diseases of the Skin and of the Cellular Tissue	212	151	5	6	5	374	...
„ 9.—Diseases of the Organs of Locomotion...	44	80	2	4	11	130	...
„ 10.—Malformation .....	...	...	1	...	1	1	...
„ 11.—Infancy	2	3	...	...	...	5	...
„ 12.—Old Age .....	...	2	3	3	...	8	...
„ 13.—Violence.....	142	90	5	21	6	258	...
„ 14.—Ill-defined Diseases	61	120	18	4	11	278*	...
Grand Total	6,613	3,190	299	760	718	10,967	...

* Includes 75 no disease.

TABLE VIII.—Operations performed during 1930.

NOTE.—“Recovered” means lived at least ten days after operation.

	Recovered.		Died.		Total.		Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.			Male.	Female.	Male.	Female.	
1. Alimentary System.						5. Osseous and Arthritic System.					
Oesophagascopy .....	...	1	...	...	1	Moving joint under anaesthetic	2	4	...	...	6
Gastrostomy	1	...	...	...	1	Reduction of fracture	22	16	...	...	38
Gastro-enterostomy	5	4	...	...	9	Plating of fracture	1	...	...	...	1
Oversewing gastric ulcer	4	1	1	...	6	Wiring of fracture	2	3	...	...	5
Oversewing duodenal ulcer	2	...	1	...	3	Osteotomy	14	6	...	...	20
Enterostomy	1	3	...	...	4	Sequestrectomy	15	5	...	...	20
Entero-enterostomy .....	...	1	...	...	1	Amputation of leg	10	6	...	...	16
Colostomy	5	6	...	1	12	Amputation of finger	3	2	...	...	5
Caecostomy	3	8	...	...	11	Amputation of toe	3	1	...	...	4
Bowel resection	2	1	1	...	4	Tenotomy	2	...	...	...	2
Appendicectomy	204	254	5	4	467	Arthrotomy	4	3	...	...	7
Cholecystectomy	11	48	...	...	59		78	46	...	...	124
Cholecystostomy	6	23	...	...	29						
Choledochotomy .....	...	1	...	...	1						
Draining abscess of peritoneal cavity ...	4	8	1	1	14						
Draining abdominal hydatid	1	...	...	...	1						
Freeing of adhesions	3	8	...	...	11						
Laparotomy	13	27	4	3	47						
Fistula in ano	6	1	...	...	7						
Fissure in ano	2	2	...	...	4						
Herniae—											
Inguinal	67	4	1	...	72	6. Respiratory System.					
Femoral	3	8	...	1	12	Resection of turbinate bones	3	2	...	...	5
Umbilical	1	3	...	1	5	Removal of nasal polypi	2	9	...	...	11
Incisional	2	8	...	...	10	Resection of nasal septum	8	1	1	...	10
	346	420	14	11	791	Tracheotomy	1	...	...	...	1
						Thoracotomy	13	9	...	...	22
						Bronchoscopy	1	...	...	...	1
						Dilatation of larynx	1	...	...	...	1
							29	21	1	...	51
2. Genito-urinary System.											
Circumcision	37	...	...	...	37						
Dilatation of urethral stricture.....	3	3	...	...	6	7. Circulatory System.					
Drainage of extravasation of urine	3	...	...	...	3	Haemorrhoidectomy	27	8	...	...	35
Varicocele	12	...	...	...	12		27	8	...	...	35
Hydrocele	11	...	...	...	11						
Orchidectomy	3	...	...	...	3						
Prostatectomy	11	...	...	...	11						
Cystoscopy	41	44	...	...	85						
Application of radium (bladder)	1	...	...	...	1						
Diathermy to bladder	6	6	...	...	12						
Supra pubic cystostomy.....	8	1	...	...	9						
Uretero-lithotomy	2	4	...	...	6	8. Lymphatic and Glandular System.					
Nephrotomy.....	6	2	...	...	8	Tonsils and adenoids	148	130	...	...	278
Nephrectomy	3	4	...	...	7	Excision of gland	2	3	...	...	5
Nephropexy	1	...	...	...	1	Adenoidectomy	9	5	...	...	14
Amputation of penis	2	...	...	...	2	Thyroidectomy	1	1	...	...	2
	150	64	...	...	214		160	139	...	...	299
3. Gynaecological System.											
Colo-perineorrhaphy .....	...	12	...	...	12	9. New Growths.					
Colpomy .....	...	39	...	...	39	Excision of lip and glands	4	...	...	...	4
Trachelorrhaphy.....	...	7	...	...	7	Partial gastrectomy	9	...	...	...	9
Diathermy to cervix uteri .....	...	5	...	...	5	Excision of carcinoma of bowel	2	3	...	...	5
Curettage uteri .....	...	969	...	5	974	Excision of breast and glands .....	...	8	...	...	8
Snipping from cervix .....	...	12	...	...	12	Excision of benign tumour	7	7	1	...	15
Induction of abortion .....	...	5	...	...	5		22	18	1	...	41
Salpingectomy .....	...	110	...	...	110						
Salpingo-oophorectomy .....	...	47	...	1	48						
Oophorectomy .....	...	21	...	...	21						
Internal shortening .....	...	4	...	...	4						
External shortening .....	...	2	...	...	2						
Ventro-suspension .....	...	1	...	...	1						
Hysterectomy .....	...	45	...	...	45	10. Miscellaneous.					
Insertion of radium cervix uteri .....	...	6	...	...	6	Paracentesis tympani	92	136	...	...	228
	...	1,285	...	6	1,291	Draining maxillary antrum	24	19	...	...	43
						Draining frontal sinus	1	4	...	...	5
4. Cellular and Cutaneous System.						Draining mastoid antrum	18	30	...	1	49
Incision	101	98	1	...	200	Cerebral decompression	5	1	...	...	6
Excision of wart	1	3	...	...	4	Ramsectomy	1	2	...	...	3
Avulsion of nail	3	2	...	...	5	Lumbar puncture	13	6	...	...	19
Excision of cyst	8	5	...	...	13	Neurectomy	1	...	1	...	2
Curettage of sinus	15	9	...	...	24	Teeth extraction	1	...	...	...	1
Skin graft	1	1	...	...	2	Removal of foreign body	8	6	...	...	14
Suture of wounds	2	3	...	...	5	Arrest of haemorrhage	1	4	...	...	5
	131	121	1	...	253	Plaster fixation	1	4	...	...	5
						Examination under anaesthetic	12	55	...	...	67
						Surgical dressings	4	25	...	...	29
							182	292	1	1	476

TABLE VIII.—Operations performed during 1930—*continued*.*Summary of Operations.*

	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
1. Alimentary	346	420	14	11	791
2. Genito-urinary	150	64	...	...	214
3. Gynaecological .....	...	1,285	...	6	1,291
4. Cellular and cutaneous	131	121	1	...	253
5. Osseous and arthritic	78	46	...	...	124
6. Respiratory	29	21	1	...	51
7. Circulatory	27	8	...	...	35
8. Lymphatic and glandular	160	139	...	...	299
9. New growths	22	18	1	...	41
10. Miscellaneous	182	292	1	1	476
	1,125	2,414	18	18	3,575

General Anaesthetics.

Kelene and ether, 2,466; ether, 508; chloroform, 29; chloroform and ether, 10; local, 52; ethylene, 39 intrapharyngeal ether, 208; intra-tracheal ether, 2; kelene, 185; spinal, 6. Total, 3,505.

STATEMENT OF WORKING EXPENSES OF THE COAST HOSPITAL FOR THE YEARS 1929-30.

TABLE IX.—Maintenance and Treatment of Patients and Staff.

	1929.	Average.		1930.	Average.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
A. Salaries and Wages—					
1. Administrative	2,252 4 7			2,654 5 8	
2. Medical	4,663 5 8			5,002 11 11	
3. Clerical	3,111 19 11			2,933 0 0	
4. Dispensary	1,236 19 11			1,198 3 7	
5. Nursing	34,391 1 8			31,242 15 4	
9. Laundry	3,366 3 3			3,570 9 6	
10. Tradesmen and Mechanics	4,720 1 6			4,403 14 7	
11. Cleaning and General	14,179 2 3			13,327 11 4	
12. Farm and Garden	779 18 2			701 18 1	
13. X-ray	341 13 0			332 14 8	
14. Workmen's Compensation Insurance Premium.....	823 18 4			823 18 4	
	69,866 8 3	94 8 3		66,191 3 0	87 6 5½
B. Provisions—					
1. Meat	5,117 10 7			4,384 1 3	
2. Milk	2,299 13 0			1,687 1 7	
3. Butter	2,444 2 10			1,983 12 9	
5. Bread and Flour.....	1,278 7 10			1,655 10 2	
6. Eggs	1,491 15 1			1,706 15 11	
7. Fish, fresh	635 6 8			923 15 7	
8. Poultry	1,761 13 10			1,104 3 9	
9. Groceries	5,128 6 0			4,371 8 3	
10. Vegetables and Fruit	2,569 10 7			1,646 14 3	
11. Malt Liquors	37 15 0			17 8 5	
12. Ice	108 11 0			125 5 6	
13. Cream	405 5 1			292 4 0	
	23,277 17 6	31 9 2		19,898 1 5	26 5 0¼
C. Drugs and Surgical Appliances—					
1. Drugs, &c.	7,098 15 1			6,433 6 2	
2. Dressings and Bandages	382 4 10			145 12 6	
3. Surgical Appliances, Renewals.....	95 19 8			597 4 11	
4. Surgical Instruments, Renewals	173 6 7			170 4 1	
5. Stimulants	157 6 8			343 6 8	
	7,907 12 10	10 13 9		7,689 14 4	10 2 10¾
D. Fuel, Light, and Power—					
1. Coal, Coke, and Wood	3,612 19 11			3,812 8 0	
4. Electricity	2,029 4 7			1,292 11 2	
5. Electrical Fittings, Renewals	423 1 5			133 11 11	
	6,065 5 11	8 3 11		5,238 11 1	6 18 2½
E. Domestic—					
1. Bedding and Bed Linen	1,261 10 7			1,312 3 3	
2. Clothing	1,090 2 5			699 0 10	
3. Drapery	657 10 11			380 19 9	
4. Uniforms	101 10 2			239 12 6	
5. Renewals of Furniture	447 18 4			142 6 4	
6. Ironmongery and Cutlery, &c.	179 1 6			437 4 2	
7. Brushware, Earthenware, &c.	254 14 2			712 0 1	
8. Laundry Materials	499 13 2			712 15 3	
	4,492 1 3	6 1 5		4,636 2 2	6 2 3¾
F. Printing and Stationery—					
1. Printing and Stationery	468 3 9			479 16 10	
3. Postage	106 5 0			118 14 8	
	574 8 9	0 15 6		598 11 6	0 15 9½
G. Maintenance of Buildings and Grounds—					
1. Ordinary Repairs and Alterations	943 17 5			819 13 6	
2. Roadways and Grounds	42 2 4			47 1 9	
	985 19 9	1 6 7		866 15 3	1 2 10½
J. Miscellaneous—					
1. Rates and Taxes	114 8 5			250 7 1	
2. Insurance.....	234 9 9			.....
3. Burials and Coffins.....	101 1 3			60 19 1	
4. Telephones	735 19 7			824 9 10	
7. Petty Expenses	406 2 0			252 7 10	
8. Unclassified	455 4 4			665 0 4	
	2,047 5 4	2 15 4		2,053 4 2	2 14 2
K. Extraordinary Expenditure—					
1. Surgical Instruments	21 9 0			52 7 7	
2. Appliances	74 16 12			7 10 0	
3. Machinery .....	.....			101 4 1	
4. New Furniture	526 13 10			81 6 6	
5. New Buildings and Additions	3 19 0			1 10 2	
6. Miscellaneous .....	.....			.....
7. Drapery .....	.....			.....
8. Ironmongery .....	.....			.....
9. Brushware .....	.....			.....
10. Bedding and Bed Linen .....	.....			.....
11. Special Repairs .....	.....			.....
	626 18 0	0 16 11		243 18 4	0 6 5¼

TABLE IX.—Maintenance and Treatment of Patients and Staff—*continued*.

	1929.	Average.		1930.	Average.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
L. Special Department—					
1. X Ray	508 8 7			859 3 2	
	508 8 7	0 13 9		859 3 2	1 2 8
M. Farm and Garden, Live Stock, &c.—					
1. Purchase of Horses and Cows	7 0 0			83 4 0	
2. Purchase of Fodder	1,421 12 4			1,913 10 9	
3. Miscellaneous	57 10 10			57 11 3	
	1,486 3 2	2 0 2		2,059 6 0	2 14 4
N. Auxiliary Hospital—					
1. Salaries and Wages	5,181 18 2			6,018 16 1	
2. Maintenance	5,568 3 11			7,503 12 3	
3. Stores	1,043 4 2			901 4 2	
	11,793 6 3	15 18 9		14,423 12 6	19 0 6 $\frac{3}{4}$
Total Expenditure	129,631 15 7	175 3 6		124,758 2 11	164 11 9
Add value of goods received from other Institutions	37 13 4			3 5 6	
	129,669 8 11			124,761 8 5	
Deduct value of goods supplied to other Institutions .....	.....			.....
	129,669 8 11			124,761 8 5	
Add value of Stock on hand, 31st Dec., 1929	5,101 15 4			5,449 9 11	
	134,771 4 3			130,210 18 4	
Deduct value of Stock on hand, 31st Dec., 1930	5,449 9 11			5,595 4 9	
	129,321 14 4			124,615 13 7	
Deduct Extraordinary Expenditure, Cost of Out-door Patients Equipment Auxiliary Hospital	1,600 9 3			1,558 14 0	
	127,721 5 1			123,056 19 7	
Average cost per occupied bed, General and Infectious Division, based on upkeep Expenditure .....	.....	172 11 10		.....	162 6 10 $\frac{1}{2}$
Deduct Collections paid to Revenue	13,212 18 4	.....		15,397 18 6	.....
	114,508 6 9			107,659 1 1	.....
Net cost per occupied bed, General and Infectious Division .....	.....	154 14 9		.....	142 0 7 $\frac{1}{4}$

TABLE X.—Amount expended from the Vote of the Public Works Department not included in the foregoing statistics.

	1929.		1930.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Steam and Hot Water Services—				
Repairs—Steam and Hot Water Services.....	528 19 10	.....	45 5 10	.....
Repairs and Renewals of Boilers.....	196 15 3	.....	157 0 0	.....
Hot Water Services.....	425 5 6	.....	502 9 1	.....
Total.....	1,151 0 7	1,151 0 7	704 14 11	704 14 11
Electric Light and Power Service—				
Electric Maintenance	212 10 0	.....	.....	.....
Total.....	212 10 0	212 10 0	.....	.....
General—				
Repairing Laundry Plant	336 4 2	.....	.....	.....
Repairs and Renovations of Buildings.....	2,275 19 9	.....	5,221 1 6	.....
Drainage	858 2 8	.....	.....	.....
Repairs and Extensions Water Service	504 19 6	.....	.....	.....
New Buildings and Additions	2,210 12 5	.....	2,151 3 3	.....
Installation Diatherm Apparatus.....	85 0 0	.....	.....	.....
Renovations, Randwick Auxiliary Hospital	7,252 18 5	.....	264 18 0	.....
Installation and Supply X Ray Plant.....	.....	.....	1,273 14 5	.....
Total.....	13,523 16 11	13,523 16 11	8,910 17 2	8,910 17 2
Grand Total	£ 14,887 7 6	14,887 7 6	9,615 12 1	9,615 12 1

2.—LEPER LAZARET.

REPORT ON LEPROSY IN NEW SOUTH WALES FOR THE YEAR ENDED
31ST DECEMBER, 1930.

The Medical Superintendent of the Coast Hospital to the Director-General of Public Health.

The Coast Hospital, Sydney, N.S.W.

Sir,

On 1st January, 1930, 20 persons remained under detention at the lazaret. (*See* Appendix A.)

During the year 4 persons were reported to the Board under the Public Health Act, 1902, Part III, as being suspected lepers, and after careful inquiry were duly certified as suffering from leprosy, and admitted to the lazaret by warrant of the Board.

Four deaths occurred during the year, viz.:—J.F., Case 131; A.W., Case 157; E.S.G., Case 171; E.W., Case 179.

The total number of persons admitted since 1883, when patients first began to be received (though the notification of leprosy was first made compulsory and the detention of lepers provided for by law only towards the end of 1890), is 183.* Distributed under nationalities, the account stands as follows:—

	Admitted.	Readmitted.	Discharged.	Repatriated.	Died	Remaining in at 31 Dec., 1930.
Whites, of European descent—						
New South Wales	48	3	15	.....	28	8
Victoria	2	.. ..	.....	.....	2	.....
Queensland	4	.....	1	.....	2	1
Northern Territory	1	.....	1	.....	.....	.....
Western Australia ..	1	.....	.....	.....	.....	1
New Zealand	1	.....	.....	.....	1	.....
Fiji	2	.....	1	.....	1	.....
England	12	.....	3	.. ..	9	.....
Ireland	8	.....	2	.....	5	1
Scotland	1	.....	1	.....	.....	.....
Germany	4	.....	1 absconded.	1	2	.....
Belgium	1	.....	.....	.....	1	.....
U.S. America	1	.....	.....	.....	1	.....
Greece	2	.....	.....	1	.. ..	1
Malta	2	.....	1 absconded.	.....	1	.....
Sweden ..	1	.....	.....	.....	1	.....
France	1	.....	.....	.....	1	.....
Mauritius	1	.....	1	.....	.....	.....
Italy	1	.....	.....	.....	.....	1
Coloured patients—						
New South Wales	3	.....	1	.....	.....	2
West Indies	1	....	1 (in 1885).	.....	.....	.....
India	4	.. ..	1 absconded.	1	2	.....
China	57	.. ..	2	33	19	3
Java	1	.....	.....	.....	1	.....
New Caledonia	1	.....	.....	.. ..	1	.....
Pacific Islands	18	.....	.. ..	5	11	2
Egypt	1	.....	.....	1	.....	.....
Zanzibar	1	.....	1 (to Hong Kong at own request).	.....	.....	.....
Syria	2	.....	1	1	.....	.....
	183	3	34	43	89	20

* This is the number of persons admitted; it does not agree with the highest number given in Appendix B in numerals which indicates the number of cases observed, whether admitted or merely described and recorded.

Thus the number remaining in the lazaret on 31st December, 1930, was 20 persons; 17 males and 3 females.

Appendix A shows particulars of each case under detention since the year 1912*, and in Appendix B are given the usual notes of the new patients received during 1930, of patients discharged or died during the year, and a survey of the condition of patients remaining in at the end of the year.

Every opportunity has been offered to members of the medical profession to visit the lazaret for the purpose of seeing such patients as were formerly under their care, or for study of the disease.

The following statements show the expenditure for the year, and the sources from which it has been defrayed :—

STATEMENT showing the Working Expenses of the Lazarets (for men and for women) at Little Bay for the year 1930.

	£	s.	d.
Salaries	1,904	6	8
Provisions	848	12	2
Fruit and vegetables	£0	3	2
Uniforms, clothing, &c.	95	13	11
Printing, stationery and postage	3	11	0
Fuel and light	131	1	1
Wines, ales, &c.	104	16	0
Ironmongery, brushware, &c.	16	0	2
Drugs, dressings, &c.	82	6	9
Sundries	255	6	7
	£3,521	17	6

Average number of patients resident, 18·3, being equal to an average of £192 9s. 0d. per inmate per annum.

STATEMENT showing the total Expenditure of the Lazarets (for men and for women) at Little Bay during the year 1930, and from what sources the amounts were paid.

EXPENDITURE.	£	s.	d.	HOW PAID.	£	s.	d.
To working expenditure, as per statement.	3,521	17	6	From vote—Maintenance of lepers by Department of Public Health	2,785	18	2
				Transfers from Coast Hospital stock	735	19	4
Total	£ 3,521	17	6	Total	£ 3,521	17	6

The needs of the patients have been carefully supplied by experienced attendants and nurses, under direct supervision of the Medical Superintendent and the Matron of the Coast Hospital, and, as in the past, every means have been adopted to alleviate their sufferings and to mitigate the hardships of their detention.

I have, &c.,

R. J. MILLARD,

Medical Superintendent.

* For particulars of cases under detention from 1883 see Annual Reports 1913–1929.

APPENDIX A.

RETURN showing Particulars of Lepers admitted to Little Bay, New South Wales, since the year 1912.

Name.	Sex.	Native of—	Occupation.	Admission.		Where from.	No. of Case in Clinical Notes.	Died or Discharged.
				Age on.	Date of.			
S.C.	Male...	China.....	Caninet-maker ...	40	21 May, 1912	Boolaroo, N.S.W.	128	
L.J.T.	" ..	N.S.W.	School	12	14 Aug., "	Lismore.....	129	Discharged, 21 July, 1916.
S.M.	" ..	Mallicolo	Labourer	50	27 " "	Maclean	130	Died, 23 April, 1919.
J.F.	" ..	N.S.W.	Van-driver	28	19 Sept., "	Glebe	131	Discharged, 1 Jan., 1920 re-admitted, 7 Nov., 1927; died, 18 Mar., 1930.
W.D.	" ..	"	Fisherman	22	24 June, 1913	Ulladulla, South Coast...	132	Discharged, 10 Feb., 1921.
J.M.	" ..	New Hebrides ...	Labourer	60	28 Nov., "	Tweed River	133	Died, 17 Mar., 1917.
J.C.M.	" ..	N.S.W.	Miner.....	26	28 Jan., 1914	Homeville, W. Maitland	134	Died, 17 June, 1915.
W.B.	" ..	England	Dealer	33	4 Mar., "	Sydney	135	Died, 14 Aug., 1915.
A.C.P.	" ..	N.S.W.	School	15	23 June, "	Lismore.....	136	Discharged, 12 Oct., 1922; re-admitted, 16 Jan., 1925.
E.W.	" ..	South Sea Is....	Labourer	50	17 Nov., "	Cudgen	137	
H.H.	" ..	England	"	36	19 May, 1915	Hornsby	138	Died, 7 Jan., 1924.
A.D.	Female	New Hebrides ...	Domestic	19	1 Sept., "	St. Kilda, Victoria	139	Died, 18 July, 1923.
C.F.	Male...	China.....	Cabinet-maker ...	50	18 Dec., "	Waterloo, N.S.W.	140	Discharged, 10 Mar., 1917.
L.F.	" ..	England	Showman	45	9 Mar., 1916	Campbelltown	141	Discharged, 2 June, 1917.
F.H.	" ..	China.....	Gardener	45	25 May, "	Sydney	142	Died, 15 June, 1916.
D.M.	" ..	N.S.W.	Publican	46	25 " "	Armidale	143	Discharged, 19 May, 1917.
W.J.P.	" ..	"	School	12	25 Nov., "	Lismore.....	144	Discharged, 5 Nov., 1924; re-admitted, 1 July, 1927.
E.L.P.	" ..	"	"	11	25 " "	"	145	Died, 27 Dec., 1922.
E.M.	" ..	Germany	"	56	3 April, 1917	Liverpool, N.S.W. ...	146	Repatriated as Prisoner of War, 27 May, 1919.
C.W.	" ..	England	"	80	14 " "	Sydney	147	Died, 18 Feb., 1923.
C.D.	Female	N.S.W.	Domestic	54	30 Oct., "	Casino, N.S.W.	148	Discharged, 12 June, 1920.
P.P.	Male...	Greece	Cafe-proprietor ..	33	21 Feb., 1918	Melbourne, Victoria ...	149	
J.C.	" ..	Ireland	Miner.....	84	5 Feb., 1919	"	150	Died, 19 Nov., 1920.
M.T.	Female	Victoria.....	Housewife.....	63	25 " "	Sydney	150A	Died, 1 May, 1919.
J.P.	Male...	Malta.....	Labourer	29	18 June, "	"	151	Absconded, 14 Sept., 1919.
J.S.	" ..	"	"	30	22 Dec., "	Kempsey	152	Died, 29 July, 1921.
A.S.	" ..	China.....	Gardener	64	3 Aug., 1920	Kandos, N.S.W.	153	Died, 2 Aug., 1923.
C.T.P.	" ..	"	Labourer	30	19 Oct., "	Nauru Is., S. Pacific...	154	Discharged, 25 April, 1921.
E.T.D.	" ..	N.S.W.	Teamster	32	10 Nov., "	Bellingen, N.S.W. ...	155	Discharged, 1 Dec., 1925.
T.F.	" ..	Ireland	Civil servant ...	57	20 Dec., "	Hobart, Tasmania	156	Discharged, 18 June, 1921.
A.W.	Female	Sweden	Seamstress	62	18 Feb., 1921	Newcastle	157	Died, 24 Feb., 1930.
D.A.	Male...	N.S.W.	Teamster	71	26 May, "	Newcastle	90	Died, 16 July, 1921.
J.C.	" ..	N.S.W.	Fisherman	22	18 Aug., "	Tilba Tilba	158	
A.S.	Female	Queensland	Domestic	20	29 Jan., 1922	Redfern	159	Returned to Peel Island, Queensland, 20 Mar., 1922.
Y.M.B. ...	Male...	France	Labourer	67	7 June, 1922	Hunter's Hill	160	Died, 12 Aug., 1922.
E.	" ..	Ceylon	Sailor.....	24	13 Dec., "	Not fixed	161	Repatriated, 26 June, 1923.
R.B.	" ..	N.S.W.	Coach-painter ...	42	18 June, 1923	Taree, N.S.W.	95	Died, 5 Aug., 1923.
C.E.B.	" ..	Northern Terr...	Garage proprietor	35	11 Aug., 1924	Darwin, N.T.	162	Discharged, 16 Sept., 1925.
H.L.S.	" ..	N.S.W.	Invalid pensioner	37	26 Oct., "	Liverpool Asylum	163	
J.B.	" ..	Ireland	Bush worker ...	61	28 Jan., 1925	Liverpool	164	
A.C.	" ..	Germany	Importer	45	6 Mar., "	Sydney	165	Absconded, 21 Aug., 1925.
K.	" ..	Hawaii	Musician .....	...	7 " "	"	166	Repatriated, 11 Mar., 1925.
A.M.	" ..	China.....	School	12	12 " "	"	167	Repatriated, 16 Dec., 1925.
A.D.	" ..	N.S.W.	"	7	21 April, "	"	168	Discharged, 1 Dec., 1925.
Wong Toe...	" ..	China.....	Gardener	46	22 Nov., "	Clarence River	169	
H.P.	" ..	N.S.W.	Farmer	39	14 Dec., "	Queensland	170	Discharged, 9 Sept., 1926.
G.T.	" ..	Scotland	Chemist.....	56	8 May, 1926	Sydney .....	.....	Discharged, 21 July, 1926.
E.S.G.	Female	Queensland	Domestic	33	27 April, 1927	Hunter's Hill	171	Died, 29 Jan., 1930.
A.R.B.	Male...	N.S.W.	Farm labourer ...	41	6 July, "	Croydon	172	Died, 26 Nov., 1928.
W.C.	Male...	Mauritius	Sugar-worker ...	47	7 Feb., 1928	Queensland	173	Discharged, 4 July, 1928.
D.E.O.	Female	Queensland	Domestic	31	29 Mar., "	Northern Territory ...	174	
Ah Hoey ...	Male...	China.....	Gardener	49	28 May, "	Liverpool	175	
P.T.I.	" ..	N.S.W.	Labourer	17	9 Dec., "	Tweed River	176	
J.L.	" ..	"	"	47	22 " "	Macksville	177	
L.M.	Female	"	Domestic	59	14 Sept., 1929	Lismore.....	178	
E.W.	" ..	"	"	33	4 Feb., 1930	Sydney 13.12.29...	179	Died, 6 Feb., 1930.
T.G.J.D. ...	Male...	"	School	13	4 July, "	Lismore.....	180	
R.G.	" ..	W. Australia	"	12	6 Aug., "	Sydney	181	
L.B.	" ..	Italy	Labourer	39	13 Sept., "	Queensland	182	

NOTES.—(a) The cases of a few other persons who, for one reason or other, were never admitted to the lazaret, have been mentioned in the course of the series of Reports, and are additional to those shown in this Table. (b) On comparison with the reports for early years, differences in ages or dates of admission of some coloured patients will be observed. Those now given are the correct ages and dates. Patients remaining under treatment have their initials shown in black-faced type.

RETURN showing admissions, discharges, &c, of Patients suffering from leprosy for the years 1918–1930.

	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.
In Lazaret on 1st January	24	24	24	24	22	21	16	15	17	15	17	20	20
Admitted during the year	1	4	4	3	3	1	2	8	1	4	5	1	4
Died during the year.....	...	2	1	2	2	5	2	...	1	2	1	1	4
Discharged	1	2	3	1	2	...	1	4	2	...	1	...	...
Repatriated .....	...	...	...	2	...	1	...	2	...	...	...	...	...
Remaining in Lazaret on 31st December	Total	24	24	24	22	21	16	15	17	15	17	20	20
	Males	19	19	20	17	16	12	11	13	11	14	15	17
	Females	5	5	4	5	5	4	4	4	3	4	5	3

Birthplaces of Lepers.—The inmates of the Lazaret at the close of the year 1930 were of the following nationalities :—New South Wales, 8; Australian aboriginals, 2; Queensland, 2; Ireland, 1; Pacific Islands, 2; China, 3; Greece, 1; Italy, 1. Total, 20.

Working Expenses of Lazaret.—During the year 1930 the total cost of the management of this Institution was £3,521 17s. 6d. Calculated on the average number of inmates, the average cost per inmate per annum was £192 2s.

APPENDIX B.

I.—New Cases.

CASE CLXXIX.—E.W., f., born 1897; admitted ~~4th February, 1930.~~ 13.12.29

History.—Born at Lismore in 1897, daughter of Case LXX, C.T., and sister of Case CXXIX, L.J.T. Her mother was admitted with leprosy in 1901 and died in the Lazaret in 1903. Her brother, born in 1899, was admitted to the Lazaret in 1912 and discharged in 1916. She has lived in Queensland, in Lismore, in Kyogle, and for the past five years in one of the northern suburbs. Date of onset cannot be fixed, but husband says there were marks on the skin at least five years ago, which became more evident after "influenza" in 1925. There are three children, sons aged 16 and 12, and a daughter aged 11. She came to Sydney to get advice and treatment in regard to her "acute dermatitis," and was admitted to hospital as such on 13th December, 1929.

On examination.—She was acutely ill with pyrexia ranging to 103 deg. and 105 deg., and unable to give any account of herself. Her face, trunk and limbs were thickly covered with an acute dermatitis, maculopopular in character and in many places vesicular. In addition to the acute rash there are many old brown macula. The nose is blocked by ulceration. The tongue is dry and the buccal mucous membrane ulcerated. There is considerable general cyanosis.

B. Leprae were obtained abundantly from nose and from a vesicle on the left arm.

After admission.—By the middle of January her temperature had become almost normal and her skin lesions had improved. But she became weaker and eventually died on 6th February, 1930.

CASE CLXXX.—T.G.J.D., m., born 1916; admitted 4th July, 1930.

History.—He is a son of E.T.D., Case CLV, who was in the Lazaret with leprosy from 10th November, 1920, to 1st December, 1925. Present patient was examined in July, 1921, and then showed no sign of leprosy. The father was released in December, 1925, and took the family to Lismore. His subsequent movements and condition are not known with certainty, but it is probable that there has not been much contact between him and the present patient. In 1926 he with two brothers and one sister was admitted to a children's home at Lismore. Soon after admission he had "peripheral neuritis" and sores broke out on legs and arms. He was for many months in hospital. Large blisters or bullae used to develop suddenly on his arms. He was still incapacitated with "peripheral neuritis" when his condition was reported to the Director General of Public Health in April, 1930. Dr. Wallace, M.O.H., Newcastle, examined him and found as follows:—

Trunk—Pigmented anæsthetic area on right buttock.

Right Hand—"Main en griffe" thumb terminal phalanx has been absorbed. Ulcer on thenar eminence.

Left Hand—Similar deformity. Ulcer left thumb. Both ulnar nerves slightly thickened.

Right Foot—Perforating ulcer ball of foot. Terminal phalanx of second toe absorbed.

Both peroneal nerves slightly thickened.

On admission—Examination confirmed the above description, with additional note of partial anæsthesia of both hands and forearms and of both lower limbs.

Mucus from left naris contained acid fast bacilli resembling B. Leprae.

After admission—Developed infiltration of cheeks and ear-lobes, and later left side of face became partially paralyzed. In November had a perforating ulcer at base of left little toe.

Sodium Gynocardate up to gr. 18 daily. Weight in December, 5 st. 9 lb.

CASE CLXXXI.—R.C., m., born 1918; admitted 22nd August, 1930.

History.—Born in West Australia. At age of about 3 years went with parents to the island of Nauru and lived there two years. Then to Queensland for three years. Then to Sydney, where they have lived for about four years. While the family was at Nauru their "house boy" was diagnosed as having leprosy. Patient's father noticed "spots" on patient's face about twelve months ago. But patient has been attending school regularly up to the present.

On admission—

Face—Leonine aspect, marked thickening of eyebrows, nose and chin.

Upper limbs—Faded brown eruption on forearms. Left ulnar nerve thickened.

Trunk—Brown staining of abdomen.

B. Leprae obtained from left eyebrow, left cheek, right and left nares and chin.

After admission—Sod. Gynocardate gr. 18 daily. Weight in December, 4 st. 13 lb.

CASE CLXXXII.—L.B., m., born 1891; admitted 13th September, 1930.

History.—Born in Italy. Has been working on sugar plantations in Queensland and came to Sydney recently.

On admission—

Head—Nodular infiltration of forehead, cheeks, earlobes.

Trunk—Copper-brown macular eruption.

Limbs—Hands and feet enlarged. Ulnar nerves markedly thickened. Anæsthesia of Ulnar distribution and of feet and legs.

B. Leprae obtained from right and left nares.

After admission—

Ol. Chaulmoogra m. 90 daily.

Weight increased from 10 st. 6 lb. to 11 st. 6 lb. in December.

II.—Discharges.

None.

III.—Deaths.

CASE CXXXI.—J.F., m., born 1884; readmitted 7th November, 1927. Died on 18th March, 1930.
He had been in extremis for more than two months.

CASE CLVII.—A.W., f., born 1859; admitted 18th February, 1921. Died on 24th February, 1930.

CASE CLXXI.—E.S.G., f., born 1894; admitted 27th April, 1927. Died 29th January, 1930; having been very ill all January.

CASE CLXXIX.—E.W., f., born 1897; admitted 13th December, 1929. Died 6th February, 1930. (*Vide supra* New Cases.)

IV.—Progress Report on Patients remaining on 31st December, 1930.

CASE LXXXVII.—F.E.B., m., born 1876; admitted 25th November, 1903.

No active change during 1930. Retains enough sight to get about. Weight 9 st. 11 lb.

CASE LXXXVIII.—G.M.S., f., born 1885; admitted 9th February, 1904.

Has had occasional recrudescence with pyrexia. Occasional osteomyelitis of legs. Takes Hydnocarpate 84 grains daily. Weight has increased to 14 st. 7 lb. in December.

CASE CI.—T.A., m., born 1870; admitted 11th July, 1905.

No notable change. Weight 11 st. 3 lb.

CASE CXXVIII.—S.C., m., born 1872; admitted 21st May, 1912.

No change. General health uniformly good.

CASE CXXXVI.—A.C.P., m., born 1898; admitted 23rd June, 1914.

His general health is good and his weight remains fairly constant at 9 st. 8 lb. No active leprosy changes except occasional return of iritis which is checked by continuous use of Atropin. Takes Chaulmoogra Oil regularly, 60–90 drops per diem.

CASE CXXXVII.—E.W., m., born 1864; admitted 17th November, 1914.

No change. Health good.

CASE CXXXIV.—W.J.P., m., born 1904; readmitted 1st July, 1927.

Eye condition about the same. Recrudescence of nodules on face and arms began in September and has persisted. Had been taking Ol. Chaulmoogra by mouth. Since beginning of October has had the oil by intramuscular injection once a week, the dose being 2cc. at first and increased gradually to 5cc.

CASE CXXXIX.—P.P., m., born 1887; admitted 21st February, 1918.

By the end of the year he had become very much weaker and thinner.

CASE CLVIII.—J.C., m., born 1899; admitted, 18th August, 1921.

Throughout the year has had copious outcrop of nodules on face; also on forearms and hands in early part of year.

Takes Gynocardate, but only 3 tablets daily. Weight remains about 9 st. 8 lb.

CASE CLXIII.—H.L.S., m., born 1887; admitted, 22nd October, 1929.

The growth in the right eye has steadily increased, but is not painful and he refuses operation. Weight as before, 10 st. 3 lb.

CASE CLXIV.—J.B., m., born 1864; admitted 28th January, 1925.

No active leprosy symptoms during the year. Less asthma. Weight in December, 10 st. 11 lb.

CASE CLXIX.—Wong Toe, m., born 1879. Admitted 22nd November, 1925.

No fresh manifestation. Takes Ol. Chaulmoogra, 90 m. daily. Weight, 9 st. 6 lb.

CASE CLXXIV.—D.E.O., f., born 1897; admitted 29th March, 1928.

Has made steady progress throughout the year. No fresh manifestations of leprosy. Weight has increased from 9 st. 1 lb. in January to 10 st. 10 lb. in December. She has had intramuscular injections of Chaulmoogra Oil, the formula being Chaulmoogra Oil 90 cc., Benzocain 5 grms., Olive Oil 10 cc., and the dose gradually increased from 2 cc. in January to 5 cc. in April and for the rest of the year.

CASE CLXXV.—Ah Hoey, m., born 1879; admitted 28th May, 1929.

Leprous condition quiescent. Mentally—often excited and imagining that people are abusing him.

Takes Chaulmoogra Oil, 90 m. daily. Weight has increased from 9 st. 5 lb. to 10 st. 6 lb.

CASE CLXXVI.—P.T.I., m., born 1911; admitted 9th December, 1928.

The nodular condition has remained active all the year. He refuses all treatment as a rule. Weight in December, 6 st. 8 lb.

CASE CLXXVII.—J.L., m., born 1881; admitted 22nd December, 1928.

The eye inflammation has been less active than in 1929, but vision has not improved. Chaulmoogra Oil, 60 m. daily. Weight 11 st. 1 lb. in December.

CASE CLXXVIII.—L.M., f., born 1870; admitted 14th September, 1929.

In April had an acute exacerbation—swelling and fresh nodules of face, ears, both arms, trunk and lower limbs. Has taken Sod. Hydnocarpate, 98 grains daily. Weight in December, 12 st. 2 lb.

3.—DAVID BERRY HOSPITAL.

Berry, New South Wales.

REPORT of the Secretary for the year ended 31st December, 1930.

Administrative Staff.—Visiting Medical Officer, Dr. H. M. Hollingworth; Matron—Miss D. G. Cawood; Secretary, A. F. Hale.

Resident Staff.—Matron, 1 Sister, 1 Staff Nurse, 5 Pupil Nurses, Cook, Laundress, 2 Housemaids 2 Male Attendants, 1 inmate worker.

Number of Wards and Beds.—Wards, 6; beds, 22; Cots, 4.

General Cases.—Beds, 20; cots, 2. *Infectious Cases.*—Beds, 2; cots, 2.

Sir,

I have the honor to submit herewith the annual report of this hospital for the year 1930 :—

Admissions and Discharges.—Remaining in on 1st January, 1930, 12; admitted during the year, 310; births, 4; discharges, 285; deaths, 18; remaining in on 31st December, 1930, 19; annual cost of maintenance, £4,631. Average cost per bed, £243 14s. 8d.

In-patients.—The total number of in-patients treated was 322, compared with 346 for the previous year; daily average, 19, as against 18 in 1929.

Out-patients.—The number of out-patients attended to was 162, compared with 109 for 1929.

Infectious Cases.—Eleven infectious cases were admitted, viz., diphtheria, 9; measles, 2.

Anæsthetics.—The total number of operations performed was 142 (major, 67; minor, 75) and 48 visits were made by the Nowra doctors in connection with these operations—Dr. Rodway, 14; Dr. Ryan, 18; Dr. Cook, 16.

Collections.—The collections for the year totalled £356 3s. 4d., compared with £454 12s. 1d. in 1929.

Buildings and Grounds.—Renovations and repairs were completed early in the year and the buildings are in fairly good condition. The grounds are in good order.

A. F. HALE,
Secretary.

4.—LADY EDELINE HOSPITAL FOR BABIES, GREYCLIFFE,
VAUCLUSE.

Annual Report for year ended 31st December, 1930.

Visiting Medical Officer.—Dr. L. R. Parker.

Honorary Staff of Consultants.—Sir Charles Clubbe, Consulting Surgeon; Dr. T. Storie Dixon, Consulting Physician; Dr. R. N. Paul, Consulting Dermatologist; Dr. R. S. Godsell, Consulting Ear, Nose and Throat Surgeon.

Resident Staff.—Matron, Miss H. J. Turner; 2 Staff Nurses and 10 Pupil Nurses.

Number of Wards—General, 6; (52 cots, 4 beds). Isolation 1; (1 cot, 1 bed). Total 53 cots, 5 beds.

Return of Admissions and Discharges.—Remaining in hospital on 31st December, 1929, 26 babies and 11 mothers; admitted during 1930, 124 babies and 48 mothers; discharged, 107 babies; died, 16; total number treated, 150 babies. Remaining in hospital on 31st December, 1930, 27 babies and 11 mothers. Daily average number of cots occupied, 23. Out-patients treated, 66. Average of beds occupied by mothers, 10·2. Annual cost of maintenance and treatment, £2,902 8s. 7d. Average cost per occupied bed, £126 3s. 10d.

VISITING MEDICAL OFFICER'S REPORT.

Admissions to Greycliffe for year ending 31st December, 1930, were 124. These, together with 26 babies who were in hospital at the commencement of the year, made a total of 150 cases treated.

The total number of deaths was 16, which represented a 13 per cent. ratio on the number admitted. This percentage was higher than it has been for a great number of years, but is attributable to the severity of the epidemic enteritis at the commencement of the year, the results of which were apparent in all the children's hospitals.

L. R. PARKER, V.M.O.

MATRON'S REPORT.

The following table shows the ages on admission of all babies treated during 1930, the number of deaths and duration of stay in hospital of all fatal cases.

	3 months.	3-6 months.	6-9 months.	9-12 months.	Over 12 months.	Total.
	60	29	19	16	26	150
Died	7	3	3	...	3	16
Duration of stay in hospital of fatal cases	7 days ...1 10 „ ...2 15 „ ...1 16 „ ...1 17 „ ...1 48 „ ...1	4 hours...1 4 days ...1 20 „ ...1	3 hours...1 2 days ...1 6 „ ...1	..... ..... .....	2 hours...1 2 days ...1 10 „ ...1	.........
	7	3	3	.....	3	16

Nature of Cases Treated.—Acute gastro-enteritis, 22 (9 deaths); acute gastritis, 45 (6 deaths); Hirschsprung's disease, 1 (died); malnutrition, 37; bronchitis, 10; prematurity, 6; whooping-cough, 2; measles, 1; congenital heart disease, 1; pyloric stenosis, 1; eczema, 2 (acute); purulent ophthalmia, 2; otitis media, 2; malnutritional enteritis, 18. Total cases treated, 150; deaths, 16.

Infectious cases were transferred to the Coast Hospital and no spread of infection resulted.

During December a licensed home at Haberfield became infected with enteritis. The Director of Maternal and Baby Welfare (Dr. E. S. Morris) had the whole complement of the home transferred to Greycliffe, where all were restored to health.

Carrara Convalescent Home, adjoining, still continues to supply sufficient milk for the diet of the babies, and frequently for general use as well.

As is usual the *Sun Toy Fund* supplied the hospital with useful toys and other presents which adds greatly to the happiness of the little patients at Xmas.

A legacy of £25 was received from the will of the late Mr. Andrew Howard Moore of Mosman.

H. TURNER,
Matron.

5.—STRICKLAND CONVALESCENT HOSPITAL FOR WOMEN, CARRARA, ROSE BAY.

Report of the Matron for the year ended 31st December, 1930.

Visiting Medical Officer.—Dr. L. R. Parker.

Resident Staff.—Matron, Miss S. G. Hartley; 1 Senior and 1 Junior Nurse; 1 Attendant.

Number of Wards and Beds.—No. of wards, 9; No. of beds, 32.

This hospital is utilised for women convalescent after severe illnesses.

Annual Return of Admissions and Discharges.—Number of patients remaining in on 1st January, 1930, 22; admitted, 668; discharged, 659; remaining in on 31st December, 1930, 31. Total number treated during 1930, 690. Average daily number of beds occupied, 35. Annual cost of maintenance, £2,858 0s. 8d. Average annual cost per bed, £81 13s. 2d.

The year's work has been satisfactory, and the house so full that all spare beds have been in use through the year. The patients show marked improvement. Several patients have had to go to hospital, and one case of diphtheria occurred.

The building has been newly painted outside; also, Ward F is now in splendid condition.

6.—DENISTONE HOUSE CONVALESCENT HOSPITAL FOR MEN, EASTWOOD.

Annual Report for the year ended 31st December, 1930.

Visiting Medical Officers.—Drs. D. Guthrie Hunter and Stewart Oag.

Staff.—Matron, Miss L. D. Meares; 1 Nurse; 1 Attendant.

Number of rooms used as wards, 7; indoor beds, 29.

Annual Return of Admissions and Discharges.—Patients in hospital, 31st December, 1929, 27; admitted during 1930, 380; discharged, 383; remaining in on 31st December, 1930, 24; average daily number of occupied beds, 28. Annual cost of maintenance, £2,520 13s. 10d. Average annual cost per bed, £90 0s. 6d.

Sufficient milk, eggs and vegetables are produced at the Institution for its requirements.

L. D. MEARES,
Matron.

7.—WATERFALL SANATORIUM.

Report of the Medical Superintendent for the year 1930.

Honorary Consulting Physicians.—Dr. Cecil Purser, Dr. E. W. Fairfax.

Resident Staff.—Medical Superintendent, Dr. H. W. Palmer; Senior Medical Officer, Dr. O. W. Mater; Junior Medical Officer, Dr. G. L. Burton; Manager, Mr. R. C. Rowe; Matron, Miss K. Walsh; 1 Sub-matron, 33 Nurses; Clerk and Storekeeper; 1 Junior Clerk; 15 Male Attendants; 5 Cooks; and 9 Artisans. A dentist visits the Institution one day a week.

Bed Accommodation.—There are 292 beds for males and 136 for females. Total, 428 beds.

Number of Patients remaining in on 1st January, 1930, 372; admitted during 1930, 509. Total under treatment, 881. Discharged 371 (quiescent, 41; much improved, 60; improved, 176; stationary, 31; worse, 63); died, 103; remaining in residence on 31st December, 1930, 407. Average daily number of beds occupied, 389. Total maintenance cost £39,409 4s. 6d. Average annual cost per patient, £106 6s. 2d.

Condition on discharge and average residence in days of the 452 tuberculous patients discharged or died. (22 non-tuberculous patients treated during the year are not included in table).

Condition on Discharge.	No. of Patients.	Average Residence in days.
Arrested .....	.....	.....
Quiescent	20	318
Much Improved	60	310
Improved	175	200
Stationary	31	15
Worse	63	304
Died	103	348
Total	452	249

"Arrested": Where no tubercle bacillus has been found in three successive weekly examinations of the sputum, and where the disease has been quiescent for two years.

"Quiescent": No symptoms of tuberculosis, and no signs of tuberculosis except such as are compatible with a completely healed lesion, and in which the sputum, if present, is free from tubercle bacilli.

"Much Improved": Where the general health is good, and the signs and symptoms of tuberculosis are materially diminished, with working capacity more or less restored.

"Improved": Where the disease is better than when admitted, but is still active.

This is the scheme of classification for tuberculous patients formulated by the Board of Control for the Campaign against Tuberculosis, and adopted by the various organisations. (See page 65.)

CONDITION of patients on admission and discharge.

Condition on Admission.	Quiescent.	Much Improved.	Improved.	Stationary.	Worse.	Died.	Total.
L1, T1.....	...	...	3	...	...	...	3
L2, T1.....	4	10	13	2	...	...	29
L3, T2.....	...	7	4	1	...	...	12
L2, T2.....	8	16	29	1	2	2	58
L3, T1.....	5	6	10	6	2	...	29
L3, T2.....	3	18	92	11	19	22	165
L1, T3.....	...	...	...	...	...	...	...
L2, T3.....	...	1	4	...	7	6	18
L3, T3.....	...	2	20	10	33	73	138

L1. signifies disease limited to part of one lobe of a lung, or slightly to two lobes.

L2. signifies extensive disease limited to one lobe, or moderately to two lobes of a lung.

L3. where more extensive disease exists than in L2.

T1. is where toxic symptoms are slight, and where complications if present are mild.

T2. is where toxic symptoms are present but not serious, and where complications are not extensive.

T3. where complications and toxic symptoms are more extensive.

This is the classification of tuberculous patients formulated by the Board of Control of the Campaign against Tuberculosis, and adopted by the various organisations. (See page 65.)

AGES of Patients Discharged or Died during 1930.

Years, 1 to 9.	Years, 10 to 19.	Years, 20 to 29.	Years, 30 to 39.	Years, 40 to 49.	Years, 50 to 59.	Years, 60 to 69.	Over 69.
4	41	111	83	116	63	27	7

OCCUPATIONS of Patients Discharged or Died during 1930.

Occupation.	Number.	Occupation.	Number.	Occupation.	Number.
Labourers	110	Building Trade	21	Station Hands	16
Housewives	57	Shop Assistants	18	Stewards	13
Indoor Trades	41	Factory Hands	17	Children	12
Housework	28	Seamen	17	Outdoor Workers	11
Clerks	28	Miners (Coal)	16	Professional Men	10
Mechanics	25	Miners (Quartz)	3	Tailoring	9

BIRTHPLACES of Patients Discharged or Died during 1930.

Country.	Number.	Country.	Number.	Country.	Number.
New South Wales	237	New Zealand	15	European Countries	23
Other Australian States	62	Ireland	14	Assyria	1
England	64	Wales	4		
Scotland	24	British Dominions.....	8		

TABLE showing sex and age periods, when first symptoms of infection were first manifested.

Sex.	1 to 9 Years.	10 to 15 Years.	16 to 19 Years.	20 to 29 Years.	30 to 39 Years.	40 to 49 Years.	50 to 59 Years.	Over Years.
Male	61	115	284	1,450	1,565	1,303	759	318
Female	66	140	319	1,006	701	311	139	41

A family history was obtainable in only 9·5 per cent. of the cases.

TABLE showing the relative incidence of infection among the different members of families giving a definite tuberculous history.

Member in Family Infected.	Female Patients.	Male Patients.
	Per cent.	Per cent.
Mother	20·9	11·2
Father	7·8	10·4
Sister	16·2	9·3
Brother	8·3	24·4
Mother and father	2·2	3·0
Mother, father, brother and sister	2·4	2·7
Brother and sister	3·2	4·8
Father and brother	2·1	4·2
Mother and brother	·5	1·0
Mother and sister	2·4	2·2
Father and sister	3·2	1·0
Mother, brother and sister	3·8	·2
Father, brother and sister	·3	·2
Husband or wife	7·5	8·7
Husband or wife with son	1·0	2·0
Husband or wife with daughter	3·0	·5
Daughter	5·1	2·0
Son	1·6	2·2
Other members of family	8·3	7·0

TABLE of Yearly Results—1921 to 1930.

Year.	Total Patients Treated.		Total Discharges.				Died.
	In Residence beginning of year.	Admitted during year.	(Arrested) Quiescent.	Much Improved.	Improved.	Unimproved.	
1921	376	556	59	107	147	67	190
1922	362	548	63	111	102	114	164
1923	356	569	42	78	159	83	157
1924	396	598	43	70	203	90	192
1925	396	587	47	115	195	31	158
1926	437	548	53	69	212	32	187
1927	432	537	22	109	223	33	173
1928	409	522	29	78	199	121	127
1929	378	537	29	61	215	112	120
1930	372	509	20 (?)*	60	175	94 (?)*	103

* In accordance with the Board of Control classification cases formerly marked as “ arrested ” are now classified as quiescent, and “ unimproved ” cases as stationary or worse.

Although the results given above concerning the 881 patients under treatment in 1930 compare favourably with previous records, there has been no noticeable improvement in the type of case admitted. In spite of the classification of patients carried out by the Tuberculosis Division, tuberculous cases only appear for treatment when any chance of recovery has passed. If sanatoria are to function efficiently cases must be discovered and placed under treatment before permanent destruction of tissue has taken place. Very few patients were admitted in the early stages of the disease and most of these only stayed for short periods, some being transferred to other sanatoria before full effects of treatment were obtained.

Treatment was along ordinary sanatorium lines, with special methods in suitable cases. Intravenous injections with glueo-calcium were given in a selected number of cases, while different combinations of iodine and cod liver oil, or mutton bird oil, were frequently tested, but results were disappointing.

Treatment among children has been most successful, and greater advantage should be taken of our available beds for children. In order that patients of school age shall not suffer from prolonged residence away from school, the Education Department has appointed a teacher for such children, so that they can continue their schooling under the most favourable conditions.

During the year quite a number of minor works have been carried out which have completed, to a large extent, the scheme planned over twenty years ago.

The entertainment of the patients is provided for by weekly cinema performances, frequent concerts by visiting artists, billiards for both men and women, bowls for men, and croquet and miniature golf for women, as well as ordinary indoor games. There is also a store conducted by a committee selected by the patients themselves, who also control all their amusements.

On the occupational therapy side a fully equipped workshop with electric driven machinery for woodwork has been provided for suitable male patients and a number of serviceable articles have been turned out by them for use in the Institution. A number of garden plots are worked by other male patients and the vegetables grown are purchased for use in the Sanatorium.

During the year an addition to the Nurses' Home was completed, thereby providing sufficient accommodation for nursing staff requirements for some years to come.

The water supply was also greatly improved by the erection of a large storage tank and the cleansing of water mains.

Extensive improvements have been made in the Sanatorium grounds. It was at last possible to finally remove all the temporary buildings which disfigured the landscape, and to place the last of the unsightly overhead steam pipes under ground.

With the removal of these obstructions it has been possible to lay out this portion of the grounds in conformity with the original plans. The results have been most successful, the lawns and gardens developing beyond expectations.

The Institution can now be said to possess a complete and up-to-date equipment, and the arrangements for the personal comfort of patients are considered to be very satisfactory. In view of the advantages now available there should be little difficulty in the future in attracting the type of case which will benefit most from sanatorium treatment.

H. W. PALMER,
Medical Superintendent.

8.—LIDCOMBE STATE HOSPITAL AND HOME FOR MEN.

Report of the Medical Superintendent for the year ended 31st December, 1930.

Honorary Visiting Staff.

Honorary Staff Surgeon, H. C. Rutherford Darling, M.D., M.S., M.R.C.S.; Honorary Assistant Surgeon, J. A. Lawson, M.B., Ch.M.; Honorary Ear, Throat, and Nose Surgeon, W. A. Dunn, M.R.C.S., Eng.; Honorary Ophthalmic Surgeons, Falkner J. Blaxland, M.D.; A. L. North, M.B., Ch.M.; Honorary Neurologist, Andrew Davidson, M.D.; Honorary Dermatologist, vacant.

Administrative Staff.—Medical Superintendent, H. V. D. Baret, B.A., M.B.; Acting Senior Medical Officer, J. McManamey, M.B., B.S.; Junior Medical Officer, J. L. Dearberg, L.R.C.P. and S. Edin.; Manager, R. J. Brown; Matron, Miss E. M. E. Manee.

Constitution of Hospital Staff on 31st December, 1930.—Medical Superintendent, Resident Medical Officers, 2; Dispenser, Manager, Clerks, 2; Matron, Sub-matron, Nurses, 43; Attendants, 68; other male staff, 18.

A dentist and an X-ray technician visit the Institution on one day each week.

Number of Wards and Beds.

Hospital Division.		General Division.		Total Accommodation.
Number of Wards.	Number of Beds.	Number of Dormitories.	Number of Beds.	
15	972	12	721	1,693

The practice has grown up in recent years of unloading on to this Institution chronic cases from the various metropolitan and country hospitals. These patients naturally require the same standard of treatment as that which obtained at the institution from which they were transferred, with the result of the gradual evolution of this Institution into a modern hospital, hampered, however, by the inadequacy of its medical staff. The recent establishment of an X-ray Department and the building (now almost completed) in these grounds of the first unit of an infectious diseases hospital for the western suburbs further points to the likelihood of this Institution becoming more of a general hospital.

Diets.—In addition to the diets provided in accordance with the approved scale, the medical officers' lists have been sufficiently liberal to satisfy the full requirements of all who were unable to partake of the scale allowance.

Admissions and Discharges for Year ended 31st December, 1930.—Remaining in on 31st December, 1929, 1,553; admitted, 3,296; discharged, 2,769; died, 524. Remaining in on 31st December, 1930, 1,556; hospital division, 879; dormitories, 677.

Average daily number of persons resident in 1926, 1,457; 1927, 1,499; 1928, 1,514; 1929, 1,639; 1930, 1,591.

Total cost of maintenance and treatment of patients and inmates for 1930, £84,991 9s. 1d. Average annual cost per head of patients and inmates, £53 11s. 1d. Total contributions received towards cost of maintenance, £15,518 4s. 1d. Total proceeds of sales, as live stock, &c., £1,240 6s. 4d.

Work of Honorary Medical Officers.—The various honorary surgeons continue to do excellent work, but more help is needed. The position of Honorary Dermatologist is still vacant owing to the resignation of Dr. A. J. P. Chapman. Steps are being taken to appoint a Radiologist and an Honorary Assistant Ear, Nose, and Throat Surgeon. The services of an Honorary Physician are also very desirable and would tend to raise the standard of diagnosis and treatment of the patients.

Work of the Staff.—The work of the staff continues of the same high standard.

Operations.—The following operations were carried out during the year:—Dr. Darling, 66; Dr. Lawson, 25; Dr. Blaxland, 25; Dr. North, 40. The Resident Medical Staff performed 152 major and minor operations.

Massage Department.—The massage department has done valuable service during the year. 186 individual patients received treatment, of whom 62 can be classed as recovered, 73 relieved, and 22 unrelieved; 29 were still under treatment at the end of the year.

X-Ray Department.—The X-ray department was opened on 4th September, 1930, and the work done has already fully justified its establishment. This fills a long felt want.

Occupational Therapy for the patients is playing an increasing part in treatment and it is anticipated that its scope will be much extended during the coming year.

Recreation for the Inmates.—The cinema installed some years ago continued to give most popular service, and the generosity of the Universal Film Manufacturing Co. (Australasia) Ltd. in providing free of cost a weekly programme is greatly appreciated.

In addition to the picture shows, a large number of first-class concerts have been provided, and special thanks are due to the many kind friends who have attended, often at much inconvenience to themselves, to give pleasure to our patients.

We are deeply indebted also to the "Smith Family" for their annual distribution of Christmas cheer to the whole of our patients and inmates; to the Nepean Dam employees of the Water and Sewerage Board, Red Cross Society and other generous donors for special gifts of comforts at Christmas and of literature throughout the year.

Wireless Installation.—From the funds provided by the generosity of the late Mr. James Hennessy, a former patient of this institution, radio equipment has been installed in our hospital wards and general recreation rooms and has afforded much pleasure to many throughout the year.

The billiard room in the main division of the institution still continues a very popular source of pleasure to the inmates.

The bowling green, which has been in course of construction for some time, is now approaching completion, and should be ready for use early in the new year.

OUT-DOOR SECTION.

In the farm and out-door sections of the institution the year's work has been one of steady progress.

The standard of our milking herd has been well maintained by introduction of young stock from tested strains and judicious culling out of inferior production cows.

The reputation of our Friesians and Jerseys has been again enhanced by further honours gained at the last Sydney Royal Show; in addition to prize money amounting to £60 1s., the championship for best Friesian bull was awarded to this institution.

The health conditions of our dairy herd continues excellent; for the seventh successive year in the regular tuberculin tests by the department's dairy inspectors, the herd was declared 100 per cent. free from that disease. 81,158 gallons of milk were produced during the year, fully providing for the needs of our hospital and general inmate population.

Thirty tons of green forage were grown on the cultivation areas, thus materially reducing the cost of hand feeding. The farming operations were considerably hampered during the year by a shortage of horse power.

Piggery.—Owing to the greatly reduced prices obtained in the market for pigs, the profit from the piggery section amounted to only £988 7s., as compared with £1,543 1s. 9d. in 1929. The health of the pigs continued uniformly good throughout the year.

Vegetable Garden.—During the year 136,441 lb. of vegetables were produced in the vegetable garden.

H. BARET,
Medical Superintendent.

9.—LIVERPOOL STATE HOSPITAL AND HOME FOR MEN.

Report of Medical Superintendent for year ended 31st December, 1930.

Honorary Visiting Staff.—Honorary Ear, Nose and Throat Surgeon, Arthur Lynton Clowes, M.B., Ch.M., Syd., F.R.C.S., Edin.; Honorary Dermatologist, W. A. McDonald, B.A., M.B. Ch.M.; Honorary Medical Officer, J. Pirie, L.R.C.P., L.R.C.S., Edin., L.F.P.S., Glas.

Staff.—Medical Superintendent, Donald Wallace, M.A., M.B., Ch.M.; Junior Medical Officer, C. R. O'Brien, M.B., Ch.M.; Manager, J. J. Ranshaw; Matron, L. W. McIntosh.

Constitution of Hospital Staff on 31st December, 1930.—Medical Superintendent, Junior Medical Officer, Manager, Matron, Sub-matron, Nurses, 10, Clerk, Storekeeper, Dispenser, Male Attendants, 21, Other Male Staff, 9. A dentist visits the Institution fortnightly.

Number of Wards and Beds.

Hospital Division.		General Division.		Total Accommodation.
Wards.	Beds.	Dormitories.	Beds.	
13	292	13	465	757 beds.*

* This total does not include 20 inmate workers' beds located in outbuildings, and 10 emergency hospital beds located in the Cancer Division.

Admissions and Discharges for Year ended 31st December, 1930.

Number of persons in residence on 1st January, 1930, 787; admitted, 1,861; total, 2,648; discharged, 1,765; died, 154; in residence on 31st December, 1930, 729; average daily number, 825. Total cost of maintenance and treatment (patients and inmates), £40,101 9s. 11d. Average cost per head, £48 7s. 3d.

Summary of Patients treated in the various Wards during 1930.

Hospital Section.	In Hospital, 1st January, 1930.	Admitted during year.	Discharged during year.	Died during year.	In Hospital, 31st December, 1930
Cancer Wards	34	141	76	56	43
General ,,	234	625	562	83	224
Totals	268	766	633	139	267
District Ward	19	238	223	15	19
Grand Total	287	1,014	861	154	286

Out-Patients.—The number of district patients seeking relief in the out-door department shows an increase of 2,465 on last year's figures. There were recorded 10,067 attendances including 1,929 dressings and operations in the district ward. The services of the Honorary Medical Officer (Dr. Pirie) have been available from time to time as required.

Inmate Accommodation.—The number of inmates in July attained the grand total of 889. The accommodation in the Home section was greatly overtaxed on several occasions, necessitating the provision of emergency beds on the verandahs and in the corridors.

Hospital Wards.—The general hospital accommodation was fully utilised throughout the year. Operations under general anaesthesia numbered 100. The operating theatre equipment, particularly the system of lighting, has proved very satisfactory.

Works.—The following works were commenced under the Unemployment Relief Scheme towards the close of the year:—Erection of Nurses' Quarters, demolition of the old Moore College, and erection of a residence for the Manager on the site formerly occupied by this building; erection of new Recreation Hall.

Recreation for Inmates.—In addition to the regular entertainments provided by "Wireless," concerts, have been arranged at frequent intervals by persons interested in the Institution. In this connection special mention should be made of the splendid entertainment provided for the patients and inmates by the "Smith Family" at Christmas time.

Farm and Dairy.—The need for green and uncooked vegetables and fresh milk as a corrective of the regulation institutional diet has been kept in view in directing the operations of the vegetable garden and dairy.

D. WALLACE,
Medical Superintendent.

MANAGER'S REVIEW OF THE OUT-DOOR WORK FOR THE YEAR ENDED 31ST DECEMBER, 1930.

During the first half of the year satisfactory progress was made with the out-door work, but, during the second half, operations in this section had to be curtailed considerably owing to the necessity for reducing expenditure on inmate gratuities on account of the financial depression.

Dairy Farm.—The quantity of milk produced was 30,961 gallons. The appointment of a herdsman to this section is still an urgent necessity.

Piggery.—The operations in this section were satisfactory. The sale during the year amounted to £431 19s. 8d.

Farm, Vegetable Garden, and Orchard.—The yield of vegetables was 76,728 lb.; fruit, 9,104 lb.; and green feed, 30 tons 13 cwt.

Bakery.—The usual high standard of quality was maintained. The total bread consumption was 262,190 lb.; buns, 216 doz.; cake, 19,300 lb.

Condition of Buildings.—All institution buildings were maintained in a reasonable state of efficiency.

Garden and Grounds.—Owing to the illness of the inmate nurseryman, and the shortage of inmate labour, the condition of the garden and grounds has not been maintained as satisfactorily as usual. There is need in this section for the appointment of a staff flower gardener.

J. J. RANSHAW,
Manager.

10.—NEWINGTON STATE HOSPITAL AND HOME FOR WOMEN.

Annual Report for the year ended 31st December, 1930.

Honorary Medical Staff.—Hon. Surgeon, Walter A. Ramsay Sharpe, M.B., M.S., F.R.C.S., Edin.; Hon. Ophthalmic Surgeon, L. Stanton-Cook, M.B., Ch.M.; Hon. Neurologist, Andrew Davidson, M.D.

Staff.—Visiting Medical Officer, Francis H. Furnival, M.R.C.S., Eng., L.S.A., Lond.; Resident Medical Officer, Lottie Sharfstein, M.B., Ch.M.; Manager, Vacant; Matron, Emily Wood; Dispenser; Sub-Matron; Nurses, 38; other female staff, 5; Clerk and Storekeeper; other male staff, 11.

A dentist visits the Institution weekly.

Admissions and Discharges.—Number of inmates on 1st January, 1930, 635; admitted, 1,184; discharged, 1,027; died, 139; remaining on December 31st, 1930, 653. Average daily number resident, 654.

Total expenditure, £30,139 17s. 5d. Average cost per bed, £46 1s. 8d.

Number of Wards and Beds.—Hospital Division—Number of wards, 14; beds, 373. Yard Division—Dormitories, 8; beds, 306.

Hospital Division Statistics.

In Hospital 1st January, 1930	...	...	...	...	...	...	309
Admitted during year	...	...	...	...	...	...	775
Discharged during year	...	...	...	...	...	...	631
Died during year	...	...	...	...	...	...	139
In Hospital 31st December, 1930	...	...	...	...	...	...	314

Classification of Diseases Treated.—General diseases, 175; alimentary, 23; circulatory, 115; respiratory, 46; genito-urinary, 32; nervous, 81; osseous and arthritic, 4; skin and gland, 92; wounds, fractures, &c., 41; miscellaneous, 41; senility, 120.

REVIEW OF YEAR'S WORK.

The erection of Nurses' Quarters for which plans and specifications have been prepared by the Public Works Department is still in abeyance.

Extensive improvements to the quarters occupied by male inmates were commenced towards the end of the year. The work is being carried out by staff artisans with the assistance of inmate workers.

The erection of a commodious shelter shed, including library, was completed in August under contract arranged by the Public Works Department, at a cost of £1,792 3s.

Entertainment of Patients and Inmates.—Entertainments have been given regularly by concert parties. The "Smith Family" continued their usual visits throughout the year, and their special entertainment at Christmas time was again greatly appreciated by the inmates.

Farm and Dairy Operations.—Vegetables produced, 66,461 lb.; fruit, 1,471 lb.; milk, 41,086 gallons. Revenue collected for the year amounted to £395 11s. 3d., comprising:—Sale of pigs, £216 18s. 4d.; calves, &c., £77 7s. 9d.; tallow, £101 5s. 2d.

H. BARET,

Acting Medical Superintendent.

11.—STATE HOME FOR AGED AND INFIRM MEN, GEORGE-STREET, PARRAMATTA.

Report for the year ended 31st December, 1930.

Staff.

Visiting Medical Officer: Dr. W. S. Brown.

Officer-in-Charge: G. M. Strange. Attendants, 5.

Number of beds in hospital, 16; in dormitories, 330; total, 346.

Admissions and Discharges.—Remaining in on 31st December, 1929, 297; admitted during year, 1,742; discharged, 1,735; died, 11; remaining in on 31st December, 1930, 293. Average daily population, 293. Total expenditure, £8,505 0s. 10d.; average cost per bed, £28 16s. 7d.

Number in Hospital on 31st December, 1929, 23; admitted during year, 105; discharged, 95; died, 11; remaining in Hospital on 31st December, 1930, 22. Number of visits by visiting Medical Officer, 246. Transferred to other Institutions, 150.

General.—No new works have been carried out during the year. Necessary repairs, &c., have been effected by inmate labour.

Amusements.—Inmates have been entertained by various concert parties during the year. At Christmas time fifty inmates were entertained at the Methodist Church. Whilst the "Smith Family" and the Salvation Army visited the Institution and distributed gifts to the inmates.

G. M. STRANGE,

Officer-in-Charge.

1.—STATE HOME FOR THE BLIND AND MEN OF DEFECTIVE SIGHT AND SENILITY, MACQUARIE-STREET, PARRAMATTA.

Report for the year ended 31st December, 1930.

Staff.

Visiting Medical Officer, Dr. W. S. Brown.

Officer-in-Charge, Mr. H. A. Pyne.

Attendants, 4. Bakers, 2.

Total Number of Beds.—228.

Admissions and Discharges.—Remaining in on the 31st December, 1929, 220; admitted during 1930, 647; remaining in on 31st December, 1930, 207; daily average number resident, 209. Total cost of maintenance, £6,642 6s. 1d. Average cost per bed, £31 15s. 8d.

Dental Work.—A qualified dentist visits the institution monthly.

Bakery.—1,029,200 lb. of bread, and 52,505 lb. of currant cake were baked in the home, the whole of which were distributed to the State Hospitals at Waterfall, Lidcombe and Newington, and the George-street and Macquarie-street homes. 794 dozen buns were also distributed at Easter.

General.—Inmates. clothing, bedding, &c., with the exception of boots and hats, were made in the home, and all carpentry work, repairs to buildings, painting, bricklaying, &c., are carried out by inmate labour under the supervision of the Officer-in-Charge.

Recreations and Amusements.—Inmates have been entertained by various concert parties during the year. Fifty inmates were given tea on the 22nd December at the Methodist Church, and at Christmas time the Salvation Army and the Smith Family distributed gifts to the inmates.

STATISTICAL SUMMARY.

TABLE I.—Summarised Statement of Expenditure :—Lady Edeline Hospital for Babies and Strickland and Denistone Convalescent Homes, for the year ended 31st December, 1930.

Head of Expenditure.	Lady Edeline Hospital for Babies.	Strickland Convalescent Hospital.	Denistone Convalescent Hospital.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Salaries	1,463 12 2	1,184 19 9	1,177 0 7	3,825 12 6
Gratuities	163 13 0	177 1 6	173 5 6	514 0 0
Provisions.....	788 14 0	927 3 9	758 1 8	2,473 19 5
Drugs, Dressings, &c.	56 5 2	15 0 4	2 16 3	74 1 9
Fuel and Lighting.....	279 2 5	153 13 8	112 15 4	545 11 5
Forage	0 10 0	221 17 0	138 16 6	361 3 6
Materials for Repairs and Renewals...	31 4 10	38 4 7	18 19 4	88 8 9
Transport Expenditure	23 16 2	9 17 11	59 2 7	92 16 8
Workers' Compensation Insurance ...	15 10 6	10 16 8	10 3 2	36 10 4
Clothing and Drapery	11 1 2	43 8 11	5 5 11	59 16 0
Hardware—Ironmongery, &c.	30 7 1	45 9 0	34 8 10	110 4 11
Telephone Charges	25 11 1	9 4 3	10 4 2	44 19 6
Miscellaneous	13 1 0	21 3 4	19 14 0	53 18 4
Total	2,902 8 7	2,858 0 8	2,520 13 10	8,281 3 1
Average Daily Number of Patients ...	23	35	28	86
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Average Cost for Occupied Beds	126 3 10	81 13 2	90 0 6	116 5 10

15. STATISTICAL SUMMARY—(Continued.)

TABLE II.—SUMMARY STATEMENT of Expenditure, State Hospital and Homes of Lidcombe, Liverpool, and Newington, Parramatta Homes (George Street and Macquarie Street), and Waterfall Sanatorium, for the year ended 31st December, 1930.

Head of Expenditure.	Lidcombe.	Liverpool.	Newington.	Waterfall Sanatorium.	Parramatta.		Total.
					Macquarie-street.	George-street.	
Salaries and Payments in the nature of Salaries	£ s. d. 36,789 0 8	£ s. d. 16,459 16 5	£ s. d. 13,338 2 7	£ s. d. 16,484 10 10	£ s. d. 2,825 17 11	£ s. d. 2,168 4 2	£ s. d. 88,065 12 7
(Gratuities to Inmates	4,280 11 0	2,510 14 1	2,100 7 0	2,006 17 6	452 18 1	391 8 10	11,742 16 6
Workers' Compensation Insurance Premiums	268 5 2	105 5 10	106 11 5	125 8 6	12 6 7	16 5 5	634 2 11
Provisions	22,755 16 6	12,670 2 2	9,367 14 10	12,738 8 3	7,154 4 11	3,642 5 7	68,328 12 3
Drugs, Dressings, Surgical Appliances, &c.	2,360 5 2	1,317 8 11	1,156 9 4	580 18 5	132 1 1	139 14 9	5,686 17 8
Fuel and Lighting	2,769 6 4	1,535 0 0	1,786 6 3	2,287 6 4	426 5 8	272 9 1	9,076 13 8
Forage	4,694 19 7	1,398 14 7	2,088 7 4	312 12 0	.....	37 0 9	8,531 14 3
Materials for Minor Repairs, Additions and Renewals to Buildings and Plant	2,148 9 10	724 5 7	569 4 6	1,007 16 6	70 13 1	52 18 2	4,973 7 8
Fire Insurance Premiums .....	.....	.....	.....	45 4 5	.....	.....	45 4 5
Transport Expenditure (including Freight and Cartage).....	1,463 14 0	1,148 19 3	654 2 0	1,280 12 8	256 13 10	197 13 10	5,001 15 7
Clothing and Drapery	5,961 17 5	1,554 7 10	1,441 6 2	643 3 3	247 2 6	658 16 9	10,506 13 11
Hardware, Ironmongery and General Stores	847 4 11	376 0 0	566 15 3	425 7 6	166 14 1	91 12 0	2,473 13 9
Furniture	473 15 11	109 10 6	67 14 2	.....	.....	.....	651 0 7
Office Expenses (Telephones, Stationery and Printing)	502 11 9	114 2 1	222 10 0	180 16 9	34 9 8	37 8 5	1,091 18 8
Live Stock and Farm and Garden Requisites	161 18 3	45 10 9	25 19 4	33 16 7	3 14 10	0 2 0	271 1 9
Miscellaneous	249 9 10	60 2 6	72 19 11	49 15 0	9 14 2	49 10 6	491 11 11
Stock on hand 31st December, 1929	85,727 6 4	40,130 0 6	33,964 10 1	38,202 14 6	11,792 16 5	7,755 10 3	217,572 18 1
Add Exchange	3,522 6 2	160 0 3	1,295 9 8	706 16 0	359 1 0	1,044 18 0	7,088 11 1
Deduct Exchange	89,249 12 6	40,290 0 9	35,259 19 9	38,909 10 6	12,151 17 5	8,800 8 3	224,661 9 2
Total	122 15 11	32 5 10	1,613 12 7	2 11 0	5,256 10 10	305 9 3	7,333 5 5
Stock on hand 31st December, 1930	89,126 16 7	40,257 14 11	33,646 7 2	38,906 19 6	6,895 6 7	8,494 19 0	217,328 3 9
Proceeds of Sales, &c.	8,992 9 6	4,533 18 2	2,344 3 9	2,610 14 11	1,097 2 9	752 13 2	20,331 2 3
Grand Total ..	98,119 6 1	44,791 13 1	35,990 10 11	41,517 14 5	7,992 9 4	9,247 12 2	237,659 6 0
Deduct—							
Stock on hand 31st December, 1930.....	10,082 1 8	3,382 11 8	4,795 5 9	1,949 19 1	881 16 8	644 9 0	21,736 3 10
Proceeds of Sales, &c.	3,045 15 4	1,367 11 6	1,055 7 9	1,354 10 1	468 6 7	98 2 4	7,329 13 7
Total Deductions	13,127 17 0	4,690 3 2	5,850 13 6	3,304 9 2	1,350 3 3	742 11 4	29,065 17 5
Total Cost	84,991 9 1	40,101 9 11	30,139 17 5	38,213 5 3	6,642 6 1	8,505 0 10	208,593 8 7
Average daily population	1,587	825	654	515*	501	295	4,085
Average annual cost per inmate.....£	53 11 1	48 7 3	46 1 8	74 4 0	31 15 8	28 16 7	51 1 3
Annual contributions towards maintenance	14,287 10 3	5,675 18 8	8,100 4 4	3,213 9 6	1,737 9 9	930 13 7	34,005 6 1

* Patients 389 ; Inmates 126.

SECTION IV.

Report of the Principal Microbiologist for the year ended 31st December, 1930.

<i>Contents.</i>	PAGE.
PART I.—Routine work, comprising Microbiological, Pathological, Serological and Medico-Legal Examinations and Examinations of Rats for Plague	123–125
PART II.—Investigational Work:—	
1. Unusual situation of <i>Enterobius (Oxyuris) vermicularis</i> . (Lab. No. P 31/5032.) (E. L. Morgan)	126
2. Sydney Milk Supply: Bacterial counts, and examinations for tubercle bacilli, May, 1927, to December, 1930. (E. L. Morgan.)	127
3. Destruction of Bacteria in Sewage by Chlorination. (E. L. Morgan)	132

Staff.

Principal Microbiologist.—Ernest Leslie Morgan, M.B., Ch.M.

Assistant Microbiologists.—Elsie J. Dalyell, M.B.; Marie M. Hamilton, M.B., Ch.M.; Stanley W. M. King, M.R.C.S., L.R.C.P.; Isobel M. Brown, M.B., B.S.; Muriel C. Letchford, B.Sc.

Senior Laboratory Assistant.—John O. Sergeant. Laboratory Assistants, 2; Junior Assistants, 7; Attendants, 4.

Clerk and Librarian.—Florence S. Wearne. Shorthand-writers and Typists, 3; Temporary Messenger, 1.

Sir,

I have the honour to submit the accompanying report dealing with the work performed in the Microbiological Laboratory during 1930.

The amount of revenue collected from examinations during 1930 was £174.

There was a very considerable increase in the number of specimens submitted during the year. The examinations in 1930 numbered 57,905, compared with 43,817 in 1929; an increase of nearly 25 per cent.

Plague.—Immunity of the State from plague has continued since 1922; the number of rats examined was 4,097, as against 5,110 in 1929.

Tuberculosis.—The number of specimens of sputa and other material examined for tubercle bacilli increased from 4,060 in 1929 to 4,266 in 1930. Of this number 696, or 16·31 per cent., were positive.

Diphtheria.—5,450 swabbings were examined for diphtheria; 1,219, or 22·36 per cent. were positive. The specimens examined in 1930 showed an increase of 1,106 on the figures for 1929. Tests for toxicity dropped from 247 in 1929 to 79 in 1930.

Typhoid.—The number of samples of blood on which Widal reactions were performed decreased from 505 in 1929 to 486 in 1930. Specimens of urine and faeces examined for typhoid bacilli also showed a decrease; largely to be accounted for by the fact that in 1929 a fairly extensive investigation was made in connection with a milk-borne outbreak of typhoid fever in the metropolitan area.

Typhus.—Two cases of endemic typhus occurred in Sydney during 1930, in both of which positive diagnostic results were obtained. A report of these cases will be found on page 47.

Hookworm.—21 specimens from pupils attending a public school in the Bellingen district were examined, with negative results. Examinations for hookworm are usually made at the Commonwealth Laboratory, Lismore, which is situated in the area in which the infection exists.

Histological Examinations.—The same increase that is noted in the rest of the work is reflected in the number of tissues submitted for histological examination.

Many of these specimens require careful preparation and close study before a report can be furnished, and the increase in numbers has added considerably to the amount of time occupied in this branch of work.

Blood Counts.—776 blood counts were made in 1930. This work has more than doubled in the past five years. The increase is to be accounted for in some measure, no doubt, by the numerous cheek counts required in cases of liver therapy and other special treatments now under trial in pernicious anaemia.

Biochemical Work.—This section has been considerably increased by inclusion of work performed at the Coast Hospital. On the appointment of an additional biochemist arrangements were made for the Coast Hospital to be visited on two days a week. Work carried out at the hospital laboratory comprises:—Test meals, 87; tests for sugar tolerance, 47; for urinary sugar, 123; and for blood sugar, 1,816; making a total of 2,073. At the head office laboratory biochemical examinations numbered 2,311; making a total of 4,384.

Undulant Fever.—Nine agglutination tests were made against *Brucella abortus* with negative results.

Venereal Diseases.—Serological examinations for syphilis and gonorrhoea show a considerable increase on the figures for the previous year, mainly as the result of systematic tests carried out on the blood of the inmates of two large State institutions. At one institution tests were made of blood specimens from 2,961 males and at the other from 1,004 females. The results of these tests are as follows :—

WASSERMANN AND KAHN TESTS FOR SYPHILIS AMONG INMATES OF TWO LARGE STATE INSTITUTIONS.				
	No. Positive.	No. Negative.	Total Examinations.	Percentage Positive.
Males.....	312	2,649	2,961	10·53
Females	137	867	1,004	13·64
	449	3,516	3,965	11·32

Examinations were also made of blood specimens from 135 children living in remote country districts, but suffering from various disabilities. All these tests were negative.

Gonorrhoea.—Snears examined numbered 5,734, an increase of 810 on the figures for 1929.

Psittacosis or Parrot Disease.—Investigation was made into the mortality among some Australian caged parrots at Roseville. The results were negative for psittacosis infection.

Measles.—During the year there was an extensive outbreak of measles among scarlet fever cases in the Coast Hospital. When a case of measles developed in a scarlatinal ward prophylactic inoculation of the remaining inmates of the ward was undertaken with satisfactory results. Approximately 800 c.c. serum from convalescent measles cases were prepared in the Microbiological Laboratory and issued to the Coast Hospital for this purpose. A short report on its use is included on page 46.

Investigational Work.—Owing to the increase in routine examinations it was not possible to devote any time to investigational work. Brief notes are included on the finding of *Oxyurus vermicularis* in a specimen sent in for histological examination (p. 126); and on the effect of chlorine on sewage effluent (p. 132).

Sydney Milk Supply.—A return is given on p. 127 of the bacterial counts of 261 samples of milk. The majority of the samples were tested for the presence of tubercle bacilli, with negative results.

Urgent Need for Increased Accommodation.—I would again call attention to the overcrowding of the staff and the urgent need for extension of the present quarters. The necessity for using the same room for several different examinations greatly hampers the work of individual officers.

PART I.—TABLE showing the Routine Examinations made for the Various Branches of the State Department of Public Health, other Government Departments, Subsidised Hospitals, &c.

	Number of Examinations. Comparative Statement.	
	1929.	1930.
Department of Public Health—		
Head Office Submissions	839	1,163
Coast Hospital	4,977	8,412
" " (Night Clinic for V.D.).....	1,801	1,563
David Berry Hospital, Berry	49	79
Lady Edeline Hospital for Babies	5	2
Lidcombe State Hospital and Home.....	1,060	5,283
Liverpool State Hospital and Home	548	781
Newington State Hospital and Home	196	2,207
Strickland Convalescent Home .....	.....	2
Waterfall Sanatorium	10	31
Medical Officer of Health, Metropolitan Districts	10	26
" " " Newcastle	40	13
Commonwealth Government	486	403
State Departments—		
Chief Secretary (Fisheries)	3	1
Education Department	86	296
Government Stores Department	21	.....
Hunter District Water and Sewerage Board	12	.....
Museum .....	.....	1
Police Department	41	63
Prisons (Long Bay Gaol, &c.)	441	390
Public Works Department	230	19
Railways and Tramways Department	10	4
State Insurance Office.....	3	1
Sydney Harbour Trust	30	97
Taronga Park Trust.....	10	1
Workers' Compensation Commission	49	7
Private Practitioners	22,362	22,133
Public Hospitals and Institutions other than State Hospitals	10,383	14,788
Municipal and Shire Councils	115	139
	43,817	57,905
Total Examinations—		
General	43,817	57,905
Rats for Plague.....	5,110	4,097
Grand Total	48,927	62,002

IN the following Statement the Routine Work is divided into sections to disclose the purposes for which the various examinations were made.

A.—Microbiological Examinations.	Number of Examinations. Comparative Statement.		No. Positive.	Per cent. Positive.
	1929.	1930.		
1. Of materials from diseased persons and animals—				
Actinomycosis	23	19		
Bilharzia .....	.....	2		
Diphtheria (swabbings)	4,334	5,450	1,219	22.36
„ (toxicity)	247	79		
Dysentery	11	6		
Gonorrhoea (smears and urine)	4,924	5,734		
„ (complement deviation test)	3,737	4,226		
Hydatids (sputa, smears, &c.)	35	26		
„ (complement deviation test)	54	53		
Hookworm .....	.....	21		
Leprosy (human).....	4	9		
„ (rat)	2	.....	
Malaria	12	14		
Mastitis (bovine)	4	3		
Meningitis	120	122		
Syphilis (Wassermann reactions)	9,180	13,418		
„ (Kahn's flocculation test)	8,249	12,737		
„ (Spirochaetes)	43	56		
Tetanus	6	7		
Tinea	10	16		
Tuberculosis (human)	4,060	4,266	696	16.31
Typhoid (Widal reactions).....	505	486	108	
„ (urine, faeces)	673	497	35	
„ (miscellaneous, water, milk)	7	14		
Unclassified : “ No growths ” from pus, &c.	1,316	1,389		
Typhus .....	.....	27	2	
Vincent's Angina	35	44		
Psittacosis .....	.....	4		
B. abortus .....	.....	9		
	37,591	48,734		
2. Examinations for Anthrax—				
Human beings	4	2		
Bottle brushes .....	.....	2		
	4	4		
3. Of Materials, &c.—				
Chemical closet contents	2	4		
Cotton wool	13	.....	
Disinfectants	23	5		
Filter	1	.....	
Lubricant	1	.....	
Rag flock .....	.....	1		
Rat poison	1	.....	
Sewage, effluents, &c.	173	9		
Soil	4	.....	
Water	271	247		
Water from swimming baths.....	33	19		
	522	285		
4. Examination of Foods for Bacterial Contamination—				
Bread	2	.....	
Chocolate	1	.....	
Fish	1	.....	
Flour	3	.....	
Meat	1	1		
Milk—				
Special bacterial counts, Sydney Milk Supply, in-				
cluding examination for tubercle bacilli	152	25		
Miscellaneous milks for bacterial counts, &c.	12	20		
Mussels	1	.....	
Oysters	6	1		
Wholemeal	1	.....	
	180	47		
5. Examinations for Food Poisoning	6	2		
	6	2		
B.—Pathological Examinations.				
1. Of Animals—				
Mammals	19	14		
Birds	1	.....	
Fish	2	.....	
	22	14		
2. Of Body Fluids—				
Blood for full and differential count	596	776		
Blood for blood typing .....	.....	24		
Blood—coagulation time	3	4		
Chemical Examinations—				
Bloods for sugar	519	2,007		
„ „ tolerance .....	.....	79		
„ urea	279	499		
„ urea and creatinin	19	23		
Urine for sugar	188	279		
„ urea	255	1,043		
Test meal specimens	188	349		
Calculus	9	10		
Miscellaneous	58	128		
Urine (general examinations)	1,078	1,022		
Faeces	52	61		
	3,244	6,304		

	Number of Examinations. Comparative Statement.			
	1929.		1930.	
Brought forward .....	..... 41,569		..... 55,390	
B.— <i>Pathological Examinations</i> — continued.				
3. Of Tissues—				
Malignant tumors	464		443	
Tubercular	26		23	
Other conditions	1,046		1,273	
		1,536		1,739
C.— <i>Examination of Parasites.</i>				
Ecto-parasites (fleas, ticks, &c.)	1		2	
Endo-parasites (round and flat worms)	7		3	
Insects (including flies and mosquitoes) and spiders ...	11		7	
Worm nodules	1		.....
		20		12
D.— <i>Medico-Legal Examinations.</i>				
Examination of Exhibits for—				
Blood stains	12		13	
Gonococci	5		7	
Seminal stains	28		41	
Spermatozoa	9		25	
Other examinations	5		5	
Poison tests	8		2	
		67		93
E.— <i>Examination of Specimens for Preparation of Vaccines.</i>				
Preparation of Autogenous Vaccines from sputa, urine, acne pustules, boils, wounds and other septic conditions.....	625		671	
		625		671
Total	43,817		57,905	

ROUTINE EXAMINATION OF RATS FOR THE PRESENCE OF PLAGUE.

TABLE showing the Number and Species of Rodents Examined in Sydney and Newcastle each month during the year ended 31st December, 1930.

1930	Sydney.				Newcastle.			
Month.	<i>R.R. Rattus.</i>	<i>Rattus Norvegicus.</i>	<i>M. Musculus.</i>	Total.	<i>R.R. Rattus.</i>	<i>Rattus Norvegicus.</i>	<i>M. Musculus.</i>	Total.
January	275	90	15	380	108	3	2	113
February	227	43	8	278	57	3	2	62
March.....	217	93	14	324	78	2	...	80
April	209	58	12	279	110	3	1	114
May	362	75	7	444	66	5	2	73
June	189	60	14	263	14	...	...	14
July	319	70	20	409	34	...	...	34
August	331	64	44	439	48	...	...	48
September	248	54	26	328	34	...	...	34
October	341	51	21	413	58	1	1	60
November	198	33	29	260	9	...	...	9
December	234	22	24	280	36	3	...	39
Total	3,150	713	234	4,097	652	20	8	680

1. UNUSUAL SITUATION OF *ENTEROBIUS (OXYURIS) VERMICULARIS*.

(Lab. No. P. 31/5032).

(E. L. MORGAN.)

The frequency with which *Enterobius vermicularis* is present in the appendix is dealt with in most text-books of pathology. The presence of this nematode in the broad ligament, however, is certainly unusual and the following notes are given on a piece of tissue submitted to the laboratory marked "Growth from broad ligament.—Mrs. G.S."

The specimen consisted of a small, firm piece of tissue, ovoid in shape, and about half an inch in length. Sections showed fibrous tissue containing an abscess cavity, in the middle of which was embedded a female *Enterobius vermicularis* containing ova (see accompanying photograph).

In view of the unusual situation, the practitioner submitting the specimen was asked for further information, with the object of ascertaining how a worm of this nature became embedded in the tissue in which it was found.



Photograph showing "*Enterobius (Oxyuris) Vermicularis*" in the broad ligament.

I am indebted to the Resident Medical Officer of the Manly District Hospital (Dr. Gertrude Grogan) for the following notes :—

"The patient complained of pain in lower abdomen for eighteen months following on a difficult confinement. Appendicectomy and ventro-suspension ten years ago. On examination there were pain and tenderness in lower abdomen and tenderness in both fornices on vaginal examination.

At operation a small white tumour was found on the right broad ligament just near the right ovary. The patient made an uninterrupted recovery."

Two possible modes of infection present themselves—firstly, from a ruptured appendix; and, secondly, by migration from the rectum by way of the uterus and fallopian tube. The history of appendicectomy ten years previously is suggestive of the former as the more probable avenue of infection.

2. INVESTIGATIONS INTO THE SYDNEY MILK SUPPLY, 1928-1930.

(E. L. MORGAN.)

The investigations outlined in the Annual Report for 1927 have been continued, and the essential information is given in the table below. This table, in conjunction with the previous report, practically completes an examination of the milk supplied by dairies in the metropolitan area. No further samples of milk were found to contain tubercle bacilli, but it will be noted from the table that guinea-pig inoculation was not carried out in 93 of the 236 samples examined.

It will be noted further that the examinations were continued throughout the years 1928, 1929 and 1930, the number of samples examined gradually diminishing during the last two years. This diminution is due to the fact that control of milk supplies has been largely removed by legislation from the jurisdiction of the Health Department and placed under the control of the newly-created Milk Board, and in the interval before the functioning of the latter body a hiatus was created, which, however, it is hoped to rectify at an early date, and to co-ordinate the work of the two departments.

The non-inoculation of guinea-pigs in 93 samples was unfortunately unavoidable, as the installation of a new electrical system in the department prevented access to the centrifuge for several months. During this period, however, the method of concentration described in the 1927 Annual Report was carried out, and slides were searched for the presence of acid-fast bacilli. None were found.

It will be seen that the results of this series show a gradual diminution in the bacterial content of the milk—an improvement probably to be attributed to the effect of the intensive supervisory campaign of the last few years.

During 1930 twenty-five samples of pasteurised milk were examined in a similar manner, and the results are appended at the end of the table. The original intention was to trace these milks back to their ultimate source, and to ascertain, if possible, whether tubercle infection was more prevalent in the country herds supplying the milk companies than in the herds of the metropolitan dairies, which supply unpasteurised milk. This scheme has been abandoned for the time being, as the Milk Board desires the co-operation of this Department, and future examinations will be undertaken in accordance with the suggestions of the Milk Board.

In view of the standard for raw milk formulated in the By-laws under the Metropolitan Milk Act, viz. :—

“5. *Raw Milk* is milk which has not been subjected to any process or treatment other than cleansing and cooling, and contains not more than 500,000 micro-organisms per cubic centimetre and no bacillus coli in one-hundredth part of a cubic centimetre.”

It is interesting to note that of the 236 samples of milk from dairies within the metropolitan area 128 would fall within the definition of raw milk, which gives a percentage of 54.2 of the total samples examined.

If, however, the wording of the by-law as to colon content were altered from 1/100 part of a c.c. to 1/1,000 part of a c.c., while the total bacterial content remained the same, 67.8 per cent. of the samples would then fall within the definition of raw milk.

TABLE showing Results of Examination of 236 Samples of Mixed Dairy Milk and 25 Samples of Pasteurised Milk examined in the Micro-biological Laboratory from May, 1928, to 31st December, 1930.

File No. of District.	File No. of Dairy.	Sample No.	Date Sample Taken.	Laboratory Papers.	Total Colonies per c.c. (Agar Plate Count).	Lactose Fermenters : Acid and Gas present in Dilution.	Predominating Organisms.	Microscopical Examination. Concentration Method for T.B., &c.	Guinea-pig Inoculation for T.B.			No. of Cows Milked.
									Serial No. of Pig.	Date of Inoculation.	Result.	
A2	A	...	19-7-29	29/8441-7	9,800	1/10 ^{c.c.}	Staphylococci	Negative ...	...	...	...	21
	A	94	29-7-29	29/8772-5	14,720	1/10	Staphylococci	Negative ...	...	...	...	13
	B	95	29-7-29	29/8772-5	15,000	1/100	Staphylococci	Negative ...	...	...	...	75
	B	98	6-8-29	29/8999-004	52,000	1	Staphylococci	Negative ...	...	...	...	72
	C	72	12-7-29	29/8163-7	86,000	1/10,000	Coliform	Negative ...	...	...	...	17
	C	...	19-7-29	29/8441-7	8,000	1/100	Staphylococci	Negative ...	...	...	...	17
	D	100	2-8-29	29/8999-04	125,000	1/10,000	Coliform	Negative ...	...	...	...	15
	E	...	19-7-29	29/8441-7	9,000	1/100	Staphylococci	Negative ...	...	...	...	47
	F	76	12-7-29	29/8163-7	167,000	Nil.	Staphylococci	Negative ...	7289	13-7-29	Negative....	47
	G	102	6-8-29	29/8999-04	8,000	Nil.	Staphylococci	Negative ...	...	...	...	15
	H	91	29-7-29	29/8772-5	110,210	1/100	Staphylococci	Negative ...	...	...	...	6
	H	97	2-8-29	29/8999-004	7,000	Nil.	Staphylococci	Negative ...	...	...	...	6
	J	99	6-8-29	29/8999-004	34,000	Nil.	Staphylococci	Negative ...	...	...	...	45
	K	93	19-7-29	29/8441-7	4,000	1/100	Staphylococci	Negative ...	...	...	...	5
	K	...	29-7-29	29/8772-5	4,100	1	Staphylococci	Negative ...	...	...	...	5
	L	101	6-8-29	29/8999-004	4,000	Nil.	Staphylococci	Negative ...	...	...	...	21
	M	80	12-7-29	29/8163-7	18,000	1	Staphylococci	Negative ...	7293	13-7-29	Negative....	18
	M	...	19-7-29	29/8441-7	16,000	1	Staphylococci	Negative ...	...	...	...	17
	N	78	12-7-29	29/8163-7	94,000	1/100	Staphylococci	Negative ...	7291	13-7-29	Negative....	12
	N	...	19-7-29	29/8441-7	17,000	1/10	Staphylococci	Negative ...	...	...	...	15
	O	74	12-7-29	29/8163-7	64,000	1/10	Staphylococci	Negative ...	7287	13-7-29	Negative....	22
	O	...	19-7-29	29/8441-7	14,200	1/100	Staphylococci	Negative ...	...	...	...	21

TABLE Showing Results of Examination of Samples of Milk in the Microbiological Laboratory—*continued*.

File No. of District.	File No. of Dairy.	Sample No.	Date Sample Taken.	Laboratory Papers.	Total Colonies per c.c. (Agar Plate Count).	Lactose Fermenters: Acid and Gas present in Dilution.	Predominating Organisms.	Microscopical Examination. Concentration Method for T.B., &c.	Guinea-pig Inoculation for T.B.			No. of Cows Milked.
									Serial No. of Pig.	Date of Inoculation.	Result.	
B1	B	4	10-12-28	28/16639-44	244,000	c.c. 1/100,000	Coliform	Negative ...	...	...	...	11
	F	3	25-5-28	28/8125-27	84,000	1/10	Staphylococci	Negative ...	...	...	...	15
	H	3	10-12-28	28/16639-44	114,000	1/100	Lactics	Negative ...	...	...	...	32
	J	3	10-12-28	28/16639-44	21,100	1/100	Staphylococci	Negative ...	...	...	...	18
	K	4	25-5-28	28/8168-70	424,000	None.	Staphylococci	Negative ...	...	...	...	17
	L	4	28-5-28	28/8264-8	2,900	None.	Staphylococci .....	.....	...	...	...	6
	M	3	28-5-28	28/8264-8	42,000	1/10	Coliforms and <i>B. zopfii</i> .....	.....	...	...	...	2
	N	3	28-5-28	28/8264-8	72,000	1/10,000	Coliforms .....	.....	...	...	...	10
	O	3	25-5-28	28/8168-70	640,000	1/100	Lactics and staphylococci	Negative ...	...	...	...	15
	S	2	10-12-28	28/16639-44	†4,480,000	1/1,000,000	Coliform	Negative ...	...	...	...	2
	T	3	25-5-28	28/8125-7	107,000	1/100	Staphylococci	Negative ...	...	...	...	16
	U	3	28-5-28	28/8264-8	550,000	1/10	Lactics and staphylococci .....	.....	...	...	...	10
	X	3	25-5-28	28/8125-27	1,192,000	1	Staphylococci and lactics	Negative ...	...	...	...	31
	X	4	10-12-28	28/16639-44	123,000	1/1,000	Staphylococci and <i>B. zopfii</i> ...	Negative ...	...	...	...	29
	Y	3	25-5-28	28/8168-70	42,000	1/10	Staphylococci	Negative ...	...	...	...	12
	Z	2	28-5-28	28/8264-8	126,000	1	Staphylococci and coliforms ...	.....	...	...	...	11
B3	DD	1	10-12-28	28/16639-44	73,400	1/1,000	Coliform and <i>B. zopfii</i>	Negative ...	...	11-12-28	Negative....	12
	B	3	14-5-28	28/7439-42	2,800	1/1,000	Coliform .....	.....	...	...	...	99
	C	1	14-5-28	28/7439-42	5,580,000	1/10	Lactics and coliforms .....	.....	...	...	...	...
	C	2	22-1-29	29/808-11	120,000	1/1,000	Coliform .....	.....	...	...	...	...
	D	1	22-1-29	29/808-11	1,040,000	1/100,000	Coliform .....	.....	...	...	...	...
	E	1	14-5-28	28/7349-42	34,800	None.	Staphylococci .....	.....	...	...	...	...
C1	E	2	22-1-29	29/808-11	109,000	1/1,000	Coliform .....	.....	...	...	...	...
	F	1	22-1-29	29/808-11	960,000	1/100,000	Coliform .....	.....	...	...	...	...
	A	1	28-8-28	28/12448-53	76,000	1/10,000	Coliform	Negative ...	...	29-8-28	Negative....	9
	C	1	16-8-28	28/10775-9	45,000	1/10	Staphylococci	Negative ...	...	17-8-28	Negative....	5
	D	1	28-8-28	28/12448-53	240,000	1/100,000	Coliform	Negative ...	...	29-8-28	Negative....	20
	E	2	18-5-28	28/7864-8	19,000	None.	Staphylococci .....	.....	...	...	...	11
	E	3	17-8-28	28/11982-8	59,100	1	Staphylococci	Negative ...	...	...	...	11
	F	1	17-8-28	28/11982-8	25,000	1	Staphylococci	Negative ...	...	18-8-28	Negative....	9
	G	1	24-7-28	28/11128-33	8,800	Nil.	Staphylococci	Negative ...	...	26-7-28	Negative....	1
	H	1	24-7-28	28/11128-33	41,000	1	Staphylococci	A few streptococci and leucocytes.	...	27-7-28	Negative....	24
	H	2	28-8-28	28/12448-53	66,000	1/10,000	Coliform	Negative ...	...	...	...	26
	H	3	21-12-28	28/17224-7	3,890	1/10	Staphylococci	Negative ...	...	...	...	20
	J	1	28-8-28	28/12448-53	290,000	1/100,000	Coliform	Negative ...	...	29-8-28	Negative....	13
	J	2	17-8-28	28/11982-8	165,000	1/1,000	Lactics	Negative ...	...	...	...	13
	L	1	13-7-28	28/10727-30	283,000	1	Staphylococci	Negative ...	...	15-7-28	Negative....	30
	L	2	13-8-28	28/11726-32	1,100,000	1/100,000	Coliform	Negative ...	...	...	...	35
	L	3	21-12-28	28/17224-7	120,000	1/10,000	Coliform	Negative ...	...	...	...	37
	K	1	24-7-28	28/11128-33	17,500	1/10	Staphylococci	Negative ...	...	26-7-28	Negative....	10
	M	2	18-5-28	28/7864-8	896,000	1/10	Staphylococci and coliforms ...	.....	...	...	...	54
	M	3	19-12-28	28/17087-9	82,000	1/10,000	Coliform	Negative ...	...	...	...	53
	N	2	7-7-28	28/11533-9	56,600	1/10	Staphylococci	Negative ...	...	...	...	21
	O	2	13-7-28	28/10727-30	14,500	None.	Staphylococci	Negative ...	...	...	...	4
	O	3	13-8-28	28/11726-32	172,000	1/100,000	Coliform	Negative ...	...	...	...	4
	P	1	17-8-28	28/11982-8	2,352,000	1/1,000,000	Coliform	Negative ...	...	18-8-28	Negative....	11
	Q	2	18-5-28	28/7864-8	450,000	1/10	Lactics .....	.....	...	...	...	28
	R	1	16-7-28	28/10775-9	736,000	1/10,000	Staphylococci	Negative ...	...	17-7-28	Negative....	8
	R	2	7-8-28	28/11533-9	76,000	1	Staphylococci	Negative ...	...	...	...	8
	S	2	13-8-28	28/11726-32	69,000	1/10,000	Coliform	Negative ...	...	14-8-28	Negative....	36
	S	3	28-8-28	28/12448-53	30,000	1/10	Staphylococci	Negative ...	...	29-8-28	Negative....	36
	T	1	16-8-28	28/10775-9	370,000	1/1,000	<i>B. zopfii</i> and staphylococci ...	Negative ...	...	17-8-28	Negative....	2
	T	2	17-8-28	28/11982-8	116,000	1/100,000	Coliform	Negative ...	...	...	...	2
	U	2	24-7-28	28/11128-33	10,200	1/10	Staphylococci	Negative ...	...	...	...	40
	V	1	28-8-28	28/12448-53	57,000	1	Staphylococci	Negative ...	...	29-8-28	Negative....	23
	W	1	7-8-28	28/11533-9	25,800	1/100	Staphylococci	Negative ...	...	8-8-28	Negative....	2
	W	2	17-8-28	28/11982-8	24,100	1/100	Staphylococci	Negative ...	...	...	...	1
	X	1	13-7-28	28/10727-30	560,000	1/10,000	Coliform	Negative ...	...	14-7-28	Negative....	22
	Y	3	18-5-28	28/7864-8	39,000	None.	Staphylococci and coliform ...	.....	...	...	...	32
	AA	1	17-8-28	28/11982-8	412,000	1	Staphylococci	Negative ...	...	18-8-28	Negative....	21
	BB	2	7-8-28	28/11533-9	3,900	1/10	Staphylococci	Negative ...	...	...	...	80
	CC	2	18-5-28	28/7864-8	91,000	None.	Staphylococci and lactics .....	.....	...	...	...	24

TABLE Showing Results of Examination of Samples of Milk in the Microbiological Laboratory—continued.

File No. of District.	File No. of Dairy.	Sample No.	Date Sample Taken.	Laboratory Papers.	Total Colonies per c.c. (Agar Plate Count).	Lactose Fermenters : Acid and Gas present in Dilution.	Predominating Organisms.	Microscopical Examination. Concentration Method for T.B., &c.	Guinea-pig Inoculation for T.B.			No. of Cows Milked.
									Serial No. of Pig.	Date of Inoculation.	Result.	
C1	DD	1	24-7-28	28/11128-33	472,000	c.c. 1/1,000	Staphylococci	Negative ...	...	25-7-28	Negative....	27
	EE	1	16-7-28	28/10775-9	197,000	1	Staphylococci	Negative ...	...	17-7-28	Negative....	9
	EE	2	6-8-28	28/11533-9	44,800	1/10	Staphylococci	Negative ...	...	...	...	9
	GG	1	16-7-28	28/10775-9	20,200	1	Staphylococci	Negative ...	...	17-7-28	Negative....	16
	GG	2	7-8-28	28/11533-9	104,000	1/100,000	Coliform	Negative ...	...	...	...	16
	HH	2	13-8-28	28/11725-32	1,245,000	1/10,000	Coliform	Negative ...	...	...	...	12
	HH	2	19-12-28	28/17087-9	20,800	1/10	Staphylococci	Negative ...	...	...	...	10
	JJ	2	7-8-28	28/11533-9	700,660	1/100	Staphylococci	Negative ...	...	...	...	86
	JJ	3	19-12-28	28/17087-9	30,400	1/1,000	Staphylococci	Negative ...	...	...	...	85
	LL	1	13-8-28	28/11726-32	1,200,000	1/100,000	Coliform	Negative ...	...	14-8-28	Negative....	25
G1	LL	2	21-12-28	28/17224-7	5,200	1/10	Staphylococci	Negative ...	...	...	...	25
	MM	1	24-7-28	28/11128-33	115,000	1/1,000	Lactics	Negative ...	...	25-7-28	Negative....	22
	MM	2	13-8-28	28/11726-32	524,000	1/1,000	Lactics	Negative ...	...	...	...	22
	NN	1	13-7-28	28/10727-30	29,600	1	Staphylococci	Negative ...	...	14-7-28	Negative....	23
	NN	2	13-8-28	28/11726-32	1,292,000	1/10,000	Staphylococci	Negative ...	...	...	...	12
	NN	3	21-12-28	28/17224-7	41,000	1/10	Staphylococci	Negative ...	...	...	...	14
	OO	3	25-5-28	28/7935-6	8,800	None.	Staphylococci	Negative ...	...	...	...	25
	A	137	6-12-29	29/14737-42	520,000	1/100,000	Coliform	Negative ...	...	...	...	8
	B	116	25-10-29	29/12558-61	306,000	1/1,000	Staphylococci	Negative ...	...	...	...	...
	B	134	6-12-29	29/14737-42	856,000	1/10,000	Coliform	Negative ...	...	...	...	3
H1	C	122	13-11-29	29/13601-6	336,060	1/100,000	Coliform	Negative ...	...	...	...	15
	C	132	6-12-29	29/14737-42	66,000	1/100	Staphylococci	Negative ...	...	...	...	14
	D	105	12-8-29	29/9317-21	1,560	Nil.	Staphylococci	Negative ...	...	...	...	24
	D	125	13-11-29	29/13601-6	19,000	Nil.	Staphylococci	Negative ...	...	...	...	18
	E	114	25-10-29	29/12558-61	1,456,000	1/100	Lactics	Negative ...	...	...	...	...
	F	107	12-8-29	29/9317-21	14,700	1/1,000	Coliform	Negative ...	...	...	...	18
	F	129	13-11-29	29/13601-6	11,000	1/10	Staphylococci	Negative ...	...	...	...	17
	G	112	25-10-29	29/12558-61	115,000	1/10	Staphylococci	Negative ...	...	...	...	...
	G	124	13-11-24	29/13601-6	2,080,000	1/1,000,000	Coliform	Negative ...	...	...	...	7
	H	127	13-11-29	29/13601-6	2,000	1	Staphylococci	Negative ...	...	...	...	16
K2	H	133	6-12-29	29/14737-42	1,550	Nil.	Lactics	Negative ...	...	...	...	15
	J	106	12-8-29	29/9317-21	15,200	Nil.	Staphylococci	Negative ...	...	...	...	38
	J	118	25-10-29	29/12558-61	29,000	1/100	Staphylococci	Negative ...	...	...	...	38
	K	120	13-11-29	29/13601-6	70,000	1	Staphylococci	Negative ...	...	...	...	3
	K	131	6-12-29	29/14737-42	18,200	Nil.	Staphylococci	Negative ...	...	...	...	3
	L	135	6-12-29	29/14737-42	4,800	1/100	Staphylococci	Negative ...	...	...	...	5
	K	3	25-5-28	28/7935-6	258,000	1/10	Lactics, staphylococci, and oidium lactis.	Negative ...	...	...	...	38
	U	3	18-5-28	28/7758-9	88,000	1/10	Staphylococci .....	.....	...	...	...	45
	X	3	18-5-28	28/7758-9	420,000	1/1,000	Staphylococci and coliforms ...	.....	...	...	...	11
	A	38	16-4-29	29/4491-5	175,000	1/1,000	Staphylococci	Negative ...	...	...	...	40
H1	A	41	18-4-29	29/4558-61	110,000	1	Staphylococci	Negative ...	7246	19-4-29	Negative....	40
	B	1	9-11-28	28/15392-401	30	Nil.	.....	Negative ...	...	10-11-28	Negative....	1
	B	2	22-11-28	28/15938-44	2,360	Nil.	Staphylococci	Negative ...	...	...	...	1
	C	35	16-4-29	29/4491-5	54,000	1/10	Staphylococci	Negative ...	7248	19-4-29	Negative....	30
	C	43	18-4-29	29/4558-61	59,000	1/10	Staphylococci	Negative ...	...	...	...	25
	D	1	10-12-28	28/16632-8	1,700	1/100	Staphylococci	Negative ...	...	11-12-28	Negative....	32
	D	2	12-2-29	29/1654-7	68,000	1/100,000	Coliform	Negative ...	7206	13-2-29	Negative....	30
	E	32	25-3-29	29/3390-3	12,720	1/10	Staphylococci	Negative ...	7230	26-3-29	Negative....	1
	E	37	16-4-29	29/4491-5	240,000	1/10	Staphylococci	Negative ...	...	...	...	1
	F	1	9-11-28	28/15391-401	58,000	1/100	B. zopfii	Negative ...	...	10-11-28	Negative....	4
K2	F	2	22-11-28	28/15933-44	8,942	Nil.	Staphylococci	Negative ...	...	...	...	4
	G	1	9-11-28	28/15391-401	9,000	Nil.	Staphylococci	Negative ...	...	10-11-28	Negative....	2
	G	2	22-11-28	28/15938-44	7,300	Nil.	Staphylococci	Negative ...	...	...	...	2
	H1	71	7-6-29	29/6741-5	20,000	1/10	Staphylococci	Negative ...	7271	8-6-29	Negative....	...
	H2	60	23-4-29	29/6044-7	10,860	1/100	Staphylococci	Negative ...	7263	24-4-29	Negative....	1
	J	24	15-3-29	29/3010-3	10,300	Nil.	Staphylococci	Negative ...	7225	16-3-29	Negative....	25
	J	28	25-3-29	29/3390-3	9,980	1/10	Staphylococci	Negative ...	7226	26-3-29	Negative....	25
	K	39	18-4-29	29/4558-61	153,000	1/100	Staphylococci	Negative ...	7244	19-4-29	Negative....	14
	K	40	23-4-29	29/6044-7	115,000	1/10	Staphylococci	Negative ...	7245	24-4-29	Negative....	14
	L	1	10-12-28	28/16632-8	4,960,000	1/1,000,000	Coliform	Negative ...	...	11-12-28	Negative....	10
K2	M	1	9-11-28	28/15392-401	10,101	Nil.	Lactics	Negative ...	...	10-11-28	Negative....	1
	M	2	22-11-28	28/15938-44	25,000	1	Staphylococci	Negative ...	...	10-11-28	Negative....	1
	N	1	9-11-28	28/15391-401	316,000	Nil.	Staphylococci	Negative ...	...	10-11-28	Negative....	1
	N	2	22-11-28	28/15938-44	204,000	1/10,000	Coliform	Negative ...	...	...	...	1
	O	1	6-11-28	28/15222-5	3,300	Nil.	Lactics	Negative ...	...	7-11-28	Negative....	1
	O	2	9-11-28	28/15391-401	1,060	Nil.	Lactics	Negative ...	...	...	...	1
	P	1	6-11-28	28/15222-5	11,500	Nil.	Lactics	Negative ...	...	7-11-28	Negative....	1
	P	2	9-11-28	28/15392-401	11,000	1	Staphylococci	Negative ...	...	...	...	1
	Q	26	25-3-29	29/3390-3	12 420	1/100	Staphylococci	Negative ...	7224	26-3-29	Negative....	24
	Q	33	16-4-29	29/4491-5	288,000	1/1,000	Coliform	Negative ...	...	...	...	24
K2	R	1	10-12-28	28/16632-8	71,000	1/10	Staphylococci	Negative ...	...	11-12-28	Negative....	45

TABLE Showing Results of Examination of Samples of Milk in the Microbiological Laboratory—continued.

File No. of District.	File No. of Dairy.	Sample No.	Date Sample Taken.	Laboratory Papers.	Total Colonies per c.c. (Agar Plate Count).	Lactose Fermenters: Acid and Gas present in Dilution.	Predominating Organisms.	Microscopical Examination. Concentration Method for T.B., &c.	Guinea-pig Inoculation for T.B.			No. of Cows Milked.
									Serial No. of Pig.	Date of Inoculation.	Result.	
K2	S	12	19-2-29	29/1943-7	50,000	c.c. 1/100	Staphylococci	Negative ...	7217	20-2-29	Negative....	42
	T	1	10-12-28	28/16632-8	436,000	1/10	Staphylococci	Negative ...	...	11-12-28	Negative ..	20
	U	14	19-2-29	29/1943-7	10,800	1/100	Staphylococci	Negative ...	7219	20-2-29	Negative .	25
	V	61	23-4-29	29/6044-7	6,200	1	Staphylococci	Negative ...	...	...	...	4
	V	70	7-6-29	29/6741-5	1,608,000	1/100,000	Coliform	Negative ...	7270	8-6-29	Negative....	4
	V	108	6-9-29	29/10475-77	11,700	Nil	Staphylococci	Negative ...	...	...	...	4
	W	58	29-4-29	29/6044-7	127,500	1/1,000	Staphylococci	Negative ...	7262	30-4-29	Negative...	59
	W	64	7-6-29	29/6741-5	26,000	1/10	Moulds	Negative ...	7264	8-6-29	Negative....	59
	X	5	12-2-29	29/1654-7	140,000	1/100,000	Coliform	Negative ...	7209	13-2-29	Negative....	6
	X	6	19-2-29	29/1943-7	173,000	1/10	Staphylococci	Negative ...	7211	20-2-29	Negative....	6
	Y	46	18-4-29	29/4558-61	378,000	1/10,000	Coliform	Negative ...	7254	19-4-29	Negative ..	50
	Y	66	7-6-29	29/6741-5	130,000	1/10,000	Staphylococci	Negative ...	7266	8-6-29	Negative..	...
	Z	1	22-11-28	28/15938-44	760	Nil.	Staphylococci	Negative ...	...	23-11-28	Negative....	1
	AA	23	15-3-29	29/3010-3	30,800	1/1,000	Staphylococci	Negative ...	...	...	...	20
	LB	21	15-3-29	29/3010-3	40,460	1/10 000	Staphylococci	Negative ...	...	...	...	6
	CC	1	10-12-28	28/16632-8	170	1/10	Coliform	Negative ...	...	11-12-28	Negative....	1
	DD	11	19-2-29	29/1943-7	95,000	1/100	Staphylococci	Negative ...	7216	20-2-29	Negative ..	1
	EE	1	6-11-28	28/15222-5	14,000	1/10	Lactics	Negative ...	...	7-11-28	Negative....	2
	EE	2	9-11-28	28/15391-401	232,000	1/1,000	Staphylococci	Negative ...	...	...	...	2
	FF	7	12-2-29	29/1654-7	69,000	1/10	Lactics	Negative ...	7212	13-2-29	Negative....	21
	GG	1	10-12-28	28/16632-8	224,000	1/10	Lactics	Negative ...	...	11-12-28	Negative ...	12
	GG1	10	19-2-29	29/1943-7	240,000	1/1,000	Staphylococci	Negative ...	7215	20-2-29	Negative....	14
	GG2	110	6-9-29	29/10475-7	113,000	1/10	Staphylococci	Negative ...	...	...	...	25
	HH	1	6-11-28	28/15222-5	10	Nil.	Lactics	Negative ...	...	7-11-28	Negative....	1
	HH	2	9-11-28	28/15392-401	520	Nil.	Lactics	Negative ...	...	...	...	1
	HH2	109	6-9-29	29/10475-7	11,660	1/10	Staphylococci	Negative ...	...	...	...	24
	JJ	25	15-3-29	29/3010-3	8,700	Nil.	Staphylococci	Negative ...	...	...	...	23
	JJ	30	25-3-29	29/3390-3	11,000	Nil.	Staphylococci	Negative ...	7228	26-3-29	Negative....	23
	KK	1	10-12-28	28/16632-8	5,000	1/100	Staphylococci	Negative ...	...	11-12-28	Negative....	38
	KK	3	12-2-29	29/1654-7	2,000	1/100	Staphylococci	Negative ...	7207	13-2-29	Negative...	40
	LL	1	9-11-28	28/15391-401	148,000	Nil.	Staphylococci	Negative ...	...	10-11-28	Negative..	1
	LL	2	22-11-28	28/15938-44	9,000	1	Staphylococci	Negative ...	...	...	...	1
I1	MM	1	16-4-29	29/4491-5	264,000	1	Staphylococci	Negative ...	...	...	...	2
	MM	45	18-4-29	29/4558-61	6,200	1	Staphylococci	Negative ...	7250	19-4-29	Negative....	2
	A	103	12-8-29	29/9317-21	6,000	1/100	Staphylococci	Negative ...	...	...	...	14
M1	B	104	12-8-29	29/9317-21	6,300	Nil.	Staphylococci	Negative ...	...	...	...	17
	A	2	2-1-29	29/32-40	18,000	1/10,000	Coliform	Negative ...	...	...	...	60
R1	C	3	15-1-29	29/541	2,500	Nil.	Staphylococci .....	.....	...	...	...	9
R2	A	3	15-5-28	28/7590-3	14,600	1/100	Coliform and moulds .....	.....	...	...	...	60
	C	3	2-1-29	29/32-40	26,100	1/10	Lactics	Negative ...	...	...	...	17
	D	3	15-5-28	28/7590-3	11,600	1/1,000	Coliform .....	.....	...	...	...	28
	G	3	2-1-29	29/32-40	63,000	1/10	Staphylococci	Negative ...	...	...	...	22
	J	3	2-1-29	29/32-40	163,000	1/100	Lactics	Negative ...	...	...	...	38
	K	2	15-5-28	28/7590-3	66,000	1/100	Staphylococci .....	.....	...	...	...	32
	P	3	15-5-28	28/7590-3	21,000	1/100	Coliform .....	.....	...	...	...	34
	Q	2	2-1-29	29/32-40	230,000	1/100,000	Coliform	Negative ...	...	...	...	11
	R	3	2-1-29	29/32-40	17,800	1/10,000	Coliform	Negative ...	...	...	...	28
	A	1	19-10-28	28/14585-6	9,000	Nil.	Staphylococci	Negative ...	...	20-10-28	Negative....	1
S1	A	2	30-10-28	28/14978-9	18,200	1/10	Staphylococci	Negative ...	...	...	...	1
	B	1	24-9-28	28/13486-91	326,000	1	Staphylococci	Negative ...	...	25-9-28	Negative....	6
	B	2	3-10-28	28/13857-62	323,000	1/10	Lactics	Negative ...	...	...	...	12
	C	1	5-9-28	28/12764-8	21,200	1	Staphylococci	Negative ...	...	6-9-28	Negative....	22
	C	2	10-9-28	28/12886-90	10,700	1/10	Staphylococci	Negative ...	...	...	...	22
	C	3	24-9-28	28/13486-91	208,000	1	Staphylococci	Negative ...	...	...	...	22
	D	1	5-9-28	28/12764-8	104,000	1/10	Staphylococci	Negative ...	...	6-9-28	Negative....	23
	E	1	24-9-28	28/13486-91	35,000	1/1,000	Staphylococci	Negative ...	...	25-9-28	Negative....	28
	E	2	8-10-28	28/14060-4	53,000	1	Staphylococci	Negative ...	...	...	...	28
	F	1	10-9-28	28/12886-90	18,200	1/100	Staphylococci	Negative ...	...	11-9-28	Negative....	2
	F	2	24-9-28	28/13486-91	32,300	1/10,000	Coliform	Negative ...	...	...	...	3
	G	1	5-9-28	28/12764-8	14,100	1	Staphylococci	Negative ...	...	6-9-28	Negative....	25
	G	2	10-9-28	28/12886-90	75,000	1	Staphylococci	Negative ...	...	...	...	25
	H	1	5-9-28	28/12764-8	81,000	1/100	Staphylococci	Negative ...	...	6-9-28	Negative....	19
	J	1	24-9-28	28/13486-91	4,200	Nil.	Staphylococci	Negative ...	...	25-9-28	Negative....	11
	J	2	3-10-28	28/13857-62	544,000	1/100,000	Coliform	Negative ...	...	...	...	11
	K	1	24-9-28	28/13486-91	177,000	1/10	Lactics	Negative ...	...	25-9-28	Negative....	6
	K	2	3-10-28	28/13857-62	208,000	1/10	Staphylococci	Negative ...	...	...	...	6

TABLE Showing Results of Examination of Samples of Milk in the Microbiological Laboratory—continued.

File No. of District.	File No. of Dairy.	Sample No.	Date Sample Taken.	Laboratory Papers.	Total Colonies per c.c. (Agar Plate Count).	Lactose Fermenters : Acid and Gas present in Dilution.	Predominating Organisms.	Microscopical Examination. Concentration Method for T.B., &c.	Guinea-pig Inoculation for T.B.			No. of Cows Milked.
									Serial No. of Pig.	Date of Inoculation.	Result.	
S1	L	1	8-10-28	28/14060-4	196,000	c.c. 1/100,000	Coliform	Negative ...	...	9-10-28	Negative....	25
	M	1	10-9-28	28/12886-90	131,000	1	Staphylococci	Negative ...	...	11-9-28	Negative....	16
	N	1	3-10-28	28/13857-62	802,000	1/100,000	Coliform	Negative ...	...	4-10-28	Negative....	7
	N	2	8-10-28	28/14060-4	892,000	1/100,000	Coliform	Negative ...	...	...	...	7
	N	3	2-1-29	29/32-40	452,000	1	Staphylococci	Negative ...	...	...	...	5
	O	1	5-9-28	28/12764-8	1,776,000	1/1,000,000	Coliform	Negative ...	...	6-9-28	Negative....	23
	O	2	10-9-28	28/12886-90	203,000	1/10	Staphylococci	Negative ...	...	...	...	23
	O	3	2-1-29	29/32-40	840,000	1/10	.....	Negative ...	...	...	...	19
	P	1	3-10-28	28/13857-62	120,000	1/100	Staphylococci	Negative ...	...	4-10-28	Negative....	9
	P	2	8-10-28	28/14060-4	7,300	Nil	Staphylococci	Negative ...	...	...	...	9
	Q	1	3-10-28	28/13857-62	1,680,000	1/1,000,000	Coliform	Negative ...	...	4-10-28	Negative....	12
	Q	2	8-10-28	28/14060-4	201	1/10	Staphylococci	Negative ...	...	...	...	10
	Q	3	2-1-29	29/32-40	3,700	1	Staphylococci .....	.....	...	...	...	12
Z	R	1	19-10-28	28/14585-6	3,400	Nil.	Staphylococci	Negative ...	...	20-10-28	Negative	2
	R	2	30-10-28	28/14978-9	6,840	1/10	Staphylococci .....	.....	...	...	...	2
	A	139	8-7-30	30/9241-6	52,000	1/10	Staphylococci	Negative ...	...	...	...	...
	B	143	8-7-30	30/9241-6	192,000	1/10,000	Staphylococci	Negative ...	...	...	...	...
	B	145	8-7-30	30/9241-6	49,000	1	Staphylococci	Negative ...	...	...	...	...
	B	147	8-7-30	30/9241-6	83,000	1/10	Staphylococci	Negative ...	...	...	...	...
	B	148	8-7-30	30/9241-6	209,000	1/100	Staphylococci	Negative ...	...	...	...	...
	B	151	8-7-30	30/9241-6	1,200	Nil.	Staphylococci	Negative ...	...	...	...	...
	C	153	19-9-30	30/12744-51	15,000	1	Staphylococci	Negative ...	...	...	...	...
	C	154	19-9-30	30/12744-51	27,000	1	Staphylococci	Negative ...	...	...	...	...
	C	155	19-9-30	30/12744-51	14,000	1	Staphylococci	Negative ...	...	...	...	...
	C	156	19-9-30	30/12744-51	16,500	1	Staphylococci	Negative ...	...	...	...	...
	C	157	19-9-30	30/12744-51	10,600	1/1,000	Staphylococci	Negative ...	...	...	...	...
	C	158	19-9-30	30/12744-51	26,000	1/10,000	Coliform	Negative ...	...	...	...	...
	C	159	19-9-30	30/12744-51	23,000	1/100	Staphylococci	Negative ...	...	...	...	...
	C	160	19-9-30	30/12744-51	8,200	1/10	Staphylococci	Negative ...	...	...	...	...
	D	167	10-11-30	30/15302-4	8,900	1/10	Staphylococci	Negative ...	...	...	...	...
	D	169	10-11-30	30/15302-4	12,100	1/10	Staphylococci	Negative ...	...	...	...	...
	D	171	10-11-30	30/15302-4	10,100	1/100	Staphylococci	Negative ...	...	...	...	...
	E	179	7-11-30	30/15305-8	201,000	1/10,000	Coliform	Negative ...	...	...	...	...
	E	180	7-11-30	30/15305-8	190,000	1/10,000	Coliform	Negative ...	...	...	...	...
	F	173	7-11-30	30/15305-8	300,000	1/100,000	Coliform	Negative ...	...	...	...	...
	F	...	13-11-30	30/15622-5	2,416,000	1/100,000	Coliform	Negative ...	...	...	...	...
	G	175	7-11-30	30/15305-8	13,000	1/1,000	Staphylococci	Negative ...	...	...	...	...
	G	...	13-11-30	30/15622-5	25,000	1/160	Staphylococci	Negative ...	...	...	...	...
	G	...	13-11-30	30/15622-5	25,000	1/1,000	Staphylococci	Negative ...	...	...	...	...
	H	181	13-11-30	30/15622-5	2,416,000	1/100,000	Coliform	Negative ...	...	...	...	...

3. DESTRUCTION OF BACTERIA IN SEWAGE BY CHLORINATION.

(E. L. MORGAN.)

From time to time it becomes necessary to determine the amount of ehlorine that is required to destroy pathogenic bacteria in samples of crude sewage or effluent from septic tanks. Such determinations have been required where it has been proposed to divert raw sewage into partially or wholly land-locked waters which may be used for bathing purposes, &c., or where septic tank sludge is to be used for distribution over vegetable gardens or land for cultivation. The method deseribed by the Ontario (Canada) Health Department is used in carrying out these determinations.

A 3 per cent. solution of ealcium hypochlorate is prepared and varying quantities of this stoek solution are added to 100 e.c. portions of the sample of sewage. Plate cultures are made and tubes of lactose are inoculated before and after the addition of the hypochlorite solution in order to determine the amount of bacterial destruction that has taken place. Tests for the presence of free chlorine are also carried out. In each instanee agar plates and lactose peptone water are inoculated with 1 e.c. of raw sewage and with sewage diluted 1/10 and 1/100 and a suitable plate is counted. In addition a time factor is included, cultures being made fifteen and thirty minutes after the addition of the hypochlorite. The time interval allows varying amounts of the hypochlorite to be tested at one time.

The following table shows the results obtained when three 100 e.c. portions of raw sewage were treated by the addition of .25, .5 and 1 e.e. of the hypochlorite solution respectively :—

Examination of sewage prior to treatment with hypochlorite solution gave the following count :—

Total colonies—10,880,000, chiefly coliform bacilli.

Laetose fermenters (acid and gas) present in 1/1,000,000. Dilution not earried further.

Amount of Hypochlorite Solution Added to 100 e.c. sewage.	Dilution.	Cultures 15 minutes.		Cultures 30 minutes.		Remarks.
		Lactose.	Count.	Lactose.	Count.	
0.25 e.c. ...	Raw sewage	A. & G.	Uncount-able.	A. & G.	154	No residual chlorine was detected immedi-ately after adding the calcium hypo-chlorite solution. Type of colonies after 30 minutes—130 spore bearing bacilli; 24 coliform type.
	1/10 ...	A. & G.	.....	A. & G.	...
	1/100 ...	A. & G.	.....	...	...
0.5 e.c. ...	Raw sewage	A. & G.	116	...	88	Residual chlorine detected 1 minute after adding the ealcium hypochlorite solution amounted to two parts per 1,000,000. At the end of 2½ hours no free chlorine could be detected. Type of colonies—all spore bearing bacilli.
	1/10 ...	...	.....	...	...
	1/100 ...	...	.....	...	...
1 e.c. ...	Raw sewage	...	114	...	80	Residual chlorine was detected and remained present for 20 hours. Type of colonies—all spore bearing bacilli.
	1/10 ...	...	.....	...	...
	1/100 ...	...	.....	...	...

In this experiment it will be seen that .5 e.c. of the sodium hypochlorite solution was the minimum effective dose for destroying the vegetative forms of bacteria, *i.e.*, .5 e.e. of a 3 per cent. solution of ealcium hypochlorite is required to sterilise 100 e.c. sewage; or 5 e.e. of a 3 per cent. solution of ealcium hypochlorite is required to sterilise 1,000 e.c. sewage; or 5 gms. of chlorine is required for 100,000 e.e. of sewage; or 50 parts of chlorine per million. Consequently, 1,000,000 gallons of sewage (10,000,000 lb.) would require 500 lb. of chlorine or 1,500 lb. of ealcium hypochlorite, *i.e.*, 2/3 ton.

The results of various experimnts support the statement that the minimum amount of the hypochlorite solution that will destroy all members of the coliform and proteus groups of micro-organisms and the vegetative forms of sporing bacteria is that amount which leaves a slight excess of free chlorine.

To destroy all forms of bacteria including spores a very much larger amount of chlorine is required.

The natural corollary to the experiments is that that amount of sodium hypochlorite which leaves a slight excess of free chlorine when added to sewage is sufficient to ensure satisfactory disinfection. In the few minutes that would be required for this determination there would be no likelihood of an appreeiable variation in the sulphuretted hydrogen such as could quite readily occur during the time that it would take to perform the longer bacteriological investigation.

[8 photographs; 16 graphs.]



